# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT4692640

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| **SUBMISSION TYPE:** | NEW ASSIGNMENT |
| **NATURE OF CONVEYANCE:** | ASSIGNMENT |

**CONVEYING PARTY DATA**

| Name | Execution Date |
|---|---|
| EMC CORPORATION | 09/06/2016 |

**RECEIVING PARTY DATA**

| | |
|---|---|
| **Name:** | EMC IP HOLDING COMPANY LLC |
| **Street Address:** | 176 SOUTH STREET |
| **City:** | HOPKINTON |
| **State/Country:** | MASSACHUSETTS |
| **Postal Code:** | 01748 |

**PROPERTY NUMBERS Total: 1**

| Property Type | Number |
|---|---|
| **Application Number:** | 15714637 |

**CORRESPONDENCE DATA**

**Fax Number:** (408)973-2595

***Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.***

**Phone:** 4089732585
**Email:** enguyen@ip-patent.com
**Correspondent Name:** VAN PELT, YI & JAMES LLP AND EMC IP HOLDING COMPA
**Address Line 1:** 10050 N. FOOTHILL BLVD.
**Address Line 2:** SUITE 200
**Address Line 4:** CUPERTINO, CALIFORNIA 95014

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|---|---|
| **ATTORNEY DOCKET NUMBER:** | EMCCP472C1 |
| **NAME OF SUBMITTER:** | DANIEL M SCHNEIDER |
| **SIGNATURE:** | /Daniel M. Schneider/ |
| **DATE SIGNED:** | 11/16/2017 |

**Total Attachments: 326**
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# PATENT ASSIGNMENT AGREEMENT

THIS PATENT ASSIGNMENT AGREEMENT ("Assignment") is made as of September 6, 2016 by and between EMC Corporation, a Massachusetts corporation, with its principal place of business at 176 South Street, Hopkinton, Massachusetts 01748 ("Assignor") and EMC IP Holding Company LLC, a Delaware limited liability company, with its principal place of business at 176 South Street, Hopkinton, Massachusetts 01748 ("Assignee"), each individually referred to as a "Party" and collectively referred to as "Parties."

WHEREAS, Assignor and Assignee are parties to the License Agreement effective as of the Effective Date between Assignor and Assignee ("Patent License");

WHEREAS, Assignor owns certain United States and foreign patents and patent applications, including which are listed on attached Schedule 1; and

WHEREAS, Assignee desires to receive from Assignor assignments to the Assigned Patents;

NOW THEREFORE, for good and valuable consideration, Assignor hereby assigns to Assignee, all of Assignor's entire right, title and interest, including the right to sue for and collect past damages and any other remedies, in and to all United States and foreign patents and patent applications owned by Assignor, including but not limited to those listed on attached Schedule 1 (the "Assigned Patents"), provided that, notwithstanding anything to the contrary herein, the Assigned Patents shall exclude all United States and foreign patents and patent applications listed on Schedule 2 (the "Excluded Patents"), and any and all reissue, substitutions, division, continuation patents and re-examination certificates based on any of the foregoing patents or patent applications, and all pending applications therefor, which claim priority from any application from which Assigned Patents are derived, as well as, all foreign counterparts of Assigned Patents. Notwithstanding anything to the contrary herein, (i) the Excluded Patents are not being assigned to Assignee under any circumstances, including without limitation if such Excluded Patents are included on Schedule 1, and (ii) if and to the extent there are any immaterial transcription, typographical or other similar errors in the information provided on Schedule 1 or Schedule 2, any such errors shall not affect the assignment of the Assigned Patents and exclusion of the Excluded Patents hereunder (as applicable).

Assignor hereby authorizes the Commissioner of Patents and Trademarks of the United States Patent and Trademark Office, and the empowered officials of any other applicable offices, authorities, authorized agents, and governments to issue or transfer all said Assigned Patents to Assignee, as assignee thereof, or otherwise as Assignee may direct.

Assignor hereby agrees to execute all documents and take all other actions as may be necessary to effect the assignments and transfers set forth in this Assignment.

Without limiting the foregoing, during the term of the License Agreement, the Parties hereby agree that Assignee shall be the beneficial and record owner of any and all patents and patent applications claiming inventions made by or on behalf of Assignor, and Assignor shall and hereby does assign and transfer to Assignee all of its rights, title and interest in and to such inventions, and the Parties shall reasonably cooperate with respect to Assignee filing for patent applications claiming such inventions in its own name, in each case notwithstanding anything to the contrary in employee invention assignment agreements or similar agreements entered into by Assignor, it being understood and agreed that any such applications, and any patents issuing therefrom, shall be subject to the terms and conditions of the License Agreement.

[Signature Page Follows]

Signed by Assignor and Assignee on the date first written above:

**EMC CORPORATION**

As Assignor

By: _____

Name: Paul T. Dacier
Title: Executive Vice President and General Counsel

**EMC IP HOLDING COMPANY LLC**
By its sole member, EMC Corporation

As Assignee

By: _____

Name: Paul T. Dacier
Title: Executive Vice President and General Counsel

COMMONWEALTH OF MASSACHUSETTS )
) ss.
COUNTY OF [Middlesex ] )

Subscribed and sworn to before me on this 1 day of September 2016

_____
Notary Public
Commission Expires: August 28, 2020

HOLLY E GIVNER
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
August 28, 2020

## SCHEDULE 1 TO PATENT ASSIGNMENT AGREEMENT

## ASSIGNED PATENTS

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13/428631 | 8301832 | STORAGE SYSTEM WITH GUARANTEED READ LATENCY | DSSD, Inc. |
| 13/555859 | 8316260 | METHOD AND SYSTEM FOR MULTI-DIMENSIONAL RAID | DSSD, Inc. |
| 13/658437 | 8448021 | METHOD AND SYSTEM FOR MULTI-DIMENSIONAL RAID | DSSD, Inc. |
| 13/677623 | 8464095 | METHOD AND SYSTEM FOR MULTI-DIMENSIONAL RAID RECONSTRUCTION AND DEFECT AVOIDANCE | DSSD, Inc. |
| 13/745246 | 8554997 | METHOD AND SYSTEM FOR MIRRORED MULTI-DIMENSIONAL RAID | DSSD, Inc. |
| 13428536 | 8327185 | METHOD AND SYSTEM FOR MULTI-DIMENSIONAL RAID | DSSD, Inc. |
| 13428705 | 8554963 | STORAGE SYSTEM WITH MULTICAST DMA AND UNIFIED ADDRESS SPACE | DSSD, Inc. |
| 13428771 | 8370567 | STORAGE SYSTEM WITH SELF DESCRIBING DATA | DSSD, Inc. |
| 13428817 | 8341342 | STORAGE SYSTEM WITH INCREMENTAL MULTI-DIMENSIONAL RAID | DSSD, Inc. |
| 13555791 | 8407377 | STORAGE SYSTEM WITH MULTICAST DMA AND UNIFIED ADDRESS SPACE | DSSD, Inc. |
| 13611797 | 8392428 | METHOD AND SYSTEM FOR HASH FRAGMENT REPRESENTATION | DSSD, Inc. |
| 13671996 | 8589659 | METHOD AND SYSTEM FOR GLOBAL NAMESPACE WITH CONSISTENT HASHING | DSSD, Inc. |
| 13673348 | 8578106 | METHOD AND SYSTEM FOR QUEUE DEMULTIPLEXOR WITH SIZE GROUPING | DSSD, Inc. |
| 13826792 | 8601206 | METHOD AND SYSTEM FOR OBJECT-BASED TRANSACTIONS IN A STORAGE SYSTEM | DSSD, Inc. |
| 13827086 | 9015353 | METHOD AND SYSTEM FOR HYBRID DIRECT INPUT/OUTPUT (I/O) WITH A STORAGE DEVICE | DSSD, Inc. |
| 13903125 | 8595385 | METHOD AND SYSTEM FOR SUBMISSION QUEUE ACCELERATION | DSSD, Inc. |
| 14/162250 | 8949692 | METHOD AND SYSTEM FOR SERVICE-AWARE PARITY PLACEMENT IN A STORAGE SYSTEM | DSSD, Inc. |
| 14/510795 | 9152499 | METHOD AND SYSTEM FOR CALCULATING PARITY VALUES FOR MULTI-DIMENSIONAL RAID | DSSD, Inc. |
| 14/982557 | | PCI EXPRESS FABRIC ROUTING FOR A FULLY-CONNECTED MESH TOPOLOGY | DSSD, Inc. |
| 14041882 | 8819304 | STORAGE SYSTEM WITH MULTICAST DMA AND UNIFIED ADDRESS SPACE | DSSD, Inc. |
| 14096708 | 8924776 | METHOD AND SYSTEM FOR CALCULATING PARITY VALUES FOR MULTI-DIMENSIONAL RAID | DSSD, Inc. |
| 14162310 | | METHOD AND SYSTEM FOR SERVICE-AWARE DATA PLACEMENT IN A STORAGE SYSTEM | DSSD, Inc. |
| 14224846 | 9003090 | PCI EXPRESS FABRIC ROUTING FOR A FULLY-CONNECTED MECH TOPOLOGY | DSSD, Inc. |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14387326 | | METHOD AND SYSTEM FOR MULTI-DIMENSIONAL RAID | DSSD, Inc. |
| 14439310 | 9363317 | METHOD AND SYSTEM FOR GLOBAL NAMESPACE WITH CONSISTENT HASHING | DSSD, Inc. |
| 14577862 | 9367396 | METHOD AND SYSTEM FOR SERVICE-AWARE PARITY PLACEMENT IN A STORAGE SYSTEM | DSSD, Inc. |
| 14639823 | | PCI EXPRESS FABRIC ROUTING FOR A FULLY-CONNECTED MESH TOPOLOGY | DSSD, Inc. |
| 14771650 | | METHOD AND SYSTEM FOR OBJECT-BASED TRANSACTIONS IN A STORAGE SYSTEM | DSSD, Inc. |
| 14927186 | | [REDACTED] | DSSD, Inc. |
| 14982557 | | PCI EXPRESS FABRIC ROUTING FOR A FULLY-CONNECTED MESH TOPOLOGY | DSSD, Inc. |
| 15/087445 | | METHOD AND SYSTEM FOR MULTI-DIMENSIONAL RAID | DSSD, Inc. |
| 15/087598 | | METHOD AND SYSTEM FOR SERVICE-AWARE PARITY PLACEMENT IN A STORAGE SYSTEM | DSSD, Inc. |
| 14663109 | | [REDACTED] | DSSD, Inc. |
| 15151219 | | [REDACTED] | DSSD, Inc. |
| 13/730080 | 9183211 | COOPERATIVE STORAGE OF SHARED FILES IN A PARALLEL COMPUTING SYSTEM WITH DYNAMIC BLOCK SIZE | EMC Corporation / US Department of Energy |
| 08/344423 | 8344423 | INLINE EXPANSION METHOD FOR PROGRAMMING LANGUAGES HAVING ARRAY FUNCTIONS | EMC Corporation |
| 08/996809 | 6145042 | TIMING PROTOCOL FOR A DATA STORAGE SYSTEM | EMC Corporation |
| 08300703 | 6130621 | METHOD AND APPARATUS FOR INHIBITING UNAUTHORIZED ACCESS TO OR UTILIZATION OF A PROTECTED DEVICE | EMC Corporation |
| 08423881 | 6032262 | DISK DRIVE RELIABILITY DETERMINATION SYSTEM AND METHOD | EMC Corporation |
| 08431307 | 6097384 | METHOD AND SYSTEM FOR REDUCING MEMORY REQUIREMENTS | EMC Corporation |
| 08445235 | 6101525 | METHOD AND APPARATUS FOR SHARED MEMORY CLEANUP | EMC Corporation |
| 08474235 | 6111528 | COMMUNICATIONS ARRANGEMENTS FOR NETWORK DIGITAL DATA PROCESSING SYSTEM | EMC Corporation |
| 08491467 | 6532547 | REDUNDANT PERIPHERAL DEVICE SUBSYSTEM | EMC Corporation |
| 08666968 | 5901227 | OBJECT SYSTEM CAPABLE OF USING DIFFERENT OBJECT AUTHORIZATION SYSTEMS | EMC Corporation |
| 08667337 | 6000030 | SOFTWARE FINGERPRINTING AND BRANDING | EMC Corporation |
| 08669592 | 5819104 | DISK ARRAY MEMORY SYSTEM HAVING BUS REPEATER AT DISK BACKPLANE | EMC Corporation |
| 08670858 | 5886557 | REDUNDANT CLOCK SIGNAL GENERATING CIRCUITRY | EMC Corporation |
| 08690142 | 5933602 | SYSTEM FOR SELECTING COMMAND PACKET AND CORRESPONDING RESPONSE PACKET FROM COMMUNICATION STREAM OF PACKETS BY MONITORING PACKETS SENT BETWEEN NODES ON NETWORK | EMC Corporation |
| 08697305 | 5734815 | METHOD AND APPARATUS FOR EFFICIENT CYCLICAL REDUNDANCY CHECK (CRC) MAINTENANCE FOR SUBSECTOR WRITES | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
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| 08699503 | 5822777 | DUAL BUS DATA STORAGE SYSTEM HAVING AN ADDRESSABLE MEMORY WITH TIMER CONTROLLER FAULT DETECTION OF DATA TRANSFER BETWEEN THE MEMORY AND THE BUSES | EMC Corporation |
| 08701862 | 5850528 | BUS TIMING PROTOCOL FOR A DATA STORAGE SYSTEM | EMC Corporation |
| 08701868 | 5954838 | DATA STORAGE SYSTEM HAVING ROW/COLUMN ADDRESS PARITY CHECKING | EMC Corporation |
| 08701917 | 6567903 | DATA STORAGE SYSTEM HAVING MASTER/SLAVE ADDRESSABLE MEMORIES | EMC Corporation |
| 08701981 | 6347365 | DATA STORAGE SYSTEM HAVING A MEMORY RESPONSIVE TO CLOCK PULSES AND PRODUCED ON A BUS AND CLOCK PULSES PRODUCED BY AN INTERNAL CLOCK (AS AMENDED) | EMC Corporation |
| 08710745 | 5892955 | CONTROL OF A MULTI-USER DISK STORAGE SYSTEM | EMC Corporation |
| 08717161 | 6189080 | MINIMUM READ RATE THROUGHPUT IN A DISK CACHE SYSTEM | EMC Corporation |
| 08720542 | 6009481 | MASS STORAGE SYSTEM USING INTERNAL SYSTEM-LEVEL MIRRORING | EMC Corporation |
| 08723137 | 6438586 | FILE TRANSFER UTILITY WHICH EMPLOYS AN INTERMEDIATE DATA STORAGE SYSTEM | EMC Corporation |
| 08723971 | 5822513 | METHOD AND APPARATUS FOR DETECTING STALE WRITE DATA | EMC Corporation |
| 08735677 | 5892828 | USER PRESENCE VERIFICATION WITH SINGLE PASSWORD ACROSS APPLICATIONS | EMC Corporation |
| 08738766 | 5991852 | CACHE RAM USING A SECONDARY CONTROLLER AND SWITCHING CIRCUIT AND IMPROVED CHASSIS ARRANGEMENT | EMC Corporation |
| 08740105 | 5828243 | METHOD FOR DETECTING CLOCK FAILURE AND SWITCHING TO BACKUP CLOCK | EMC Corporation |
| 08741620 | 5966730 | BACKUP SYSTEM FOR COMPUTER NETWORK INCORPORATING OPPORTUNISTIC BACKUP BY PRIORITIZING LEAST RECENTLY BACKED UP COMPUTER OR COMPUTER STORAGE MEDIUM | EMC Corporation |
| 08742506 | 5781724 | METHOD AND SYSTEM FOR INTEGRATING ADDITIONAL FUNCTIONALITY INTO A LOGIN SYSTEM | EMC Corporation |
| 08747631 | 5893140 | FILE SERVER HAVING A FILE SYSTEM CACHE AND PROTOCOL FOR TRULY SAFE ASYNCHRONOUS WRITES | EMC Corporation |
| 08747769 | 6298386 | NETWORK FILE SERVER HAVING A MESSAGE COLLECTOR QUEUE FOR CONNECTIONLESS ORIENTED PROTOCOLS | EMC Corporation |
| 08748363 | 5944789 | NETWORK FILE SERVER MAINTAINING LOCAL CACHES OF FILE DIRECTORY INFORMATION IN DATA MOVER COMPUTERS | EMC Corporation |
| 08748889 | 5913025 | METHOD AND APPARATUS FOR PROXY AUTHENTICATION | EMC Corporation |
| 08749311 | 5922077 | FAIL-OVER SWITCHING SYSTEM | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 08753673 | 5884055 | METHOD AND APPARATUS INCLUDING A SHARED RESOURCE AND MULTIPLE PROCESSORS RUNNING A COMMON CONTROL PROGRAM ACCESSING THE SHARED RESOURCE | EMC Corporation |
| 08753952 | 5926836 | COMPUTER AND ASSOCIATED METHOD FOR RESTORING DATA BACKED UP ON ARCHIVE MEDIA | EMC Corporation |
| 08757122 | 6029231 | RETRIEVAL OF DATA STORED ON REDUNDANT DISKS ACROSS A NETWORK USING REMOTE PROCEDURE CALLS | EMC Corporation |
| 08757123 | 6460123 | MIRRORING COMPUTER DATA | EMC Corporation |
| 08757124 | 6032224 | HIERARCHICAL PERFORMANCE SYSTEM FOR MANAGING A PLURALITY OF STORAGE UNITS WITH DIFFERENT ACCESS SPEEDS | EMC Corporation |
| 08757125 | 5875478 | COMPUTER BACKUP USING A FILE SYSTEM, NETWORK, DISK, TAPE AND REMOTE ARCHIVING REPOSITORY MEDIA SYSTEM | EMC Corporation |
| 08757214 | 5890219 | REDUNDANT WRITING OF DATA TO CACHED STORAGE SYSTEM | EMC Corporation |
| 08757226 | 5890207 | HIGH PERFORMANCE INTEGRATED CACHED STORAGE DEVICE | EMC Corporation |
| 08766525 | 5832483 | DISTRIBUTED CONTROL INTERFACE FOR MANAGING THE INTEROPERABILITY AND CONCURRENCY OF AGENTS AND RESOURCES IN A REAL-TIME ENVIRONMENT | EMC Corporation |
| 08766686 | 5903720 | METHOD AND APPARATUS FOR STORAGE SYSTEM MANAGEMENT IN A MULTI-HOST ENVIRONMENT | EMC Corporation |
| 08771818 | 5778394 | SPACE RECLAMATION SYSTEM AND METHOD FOR USE IN CONNECTION WITH TAPE LOGGING SYSTEM | EMC Corporation |
| 08774121 | 5909700 | BACKUP DATA STORAGE FACILITY INCORPORATING FILTERING TO SELECT DATA ITEMS TO BE BACKED UP | EMC Corporation |
| 08774122 | 5809435 | EFFICIENT INDEX ARRANGEMENT AND METHOD FOR IDENTIFYING VALID RECORDS STORED ON LOGGING DIGITAL DATA STORAGE SUBSYSTEM | EMC Corporation |
| 08774124 | 6202135 | SYSTEM AND METHOD FOR RECONSTRUCTING DATA ASSOCIATED WITH PROTECTED STORAGE VOLUME STORED IN MULTIPLE MODULES OF BACK-UP MASS DATA STORAGE FACILITY | EMC Corporation |
| 08775034 | 6003047 | NON HIERARCHICAL INTERFACE FOR APPLICATION PROGRAMS | EMC Corporation |
| 08775575 | 5996030 | SYSTEM FOR PROVIDING AN INTERROGATING HOST COMPUTER WITH GROUP STATUS INFORMATION ABOUT DISK DEVICES INCLUDING STATUS INFORMATION REGARDING DISK DEVICES NOT ACCESSIBLE TO SAID HOST | EMC Corporation |
| 08775828 | 5822780 | METHOD AND APPARATUS FOR HIERARCHICAL STORAGE MANAGEMENT FOR DATA BASE MANAGEMENT SYSTEMS | EMC Corporation |
| 08786918 | 5893118 | METHOD FOR MANAGING GLOBALLY DISTRIBUTED SOFTWARE COMPONENTS | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 08790642 | 6029229 | DIGITAL DATA STORAGE SUBSYSTEM INCLUDING DIRECTORY FOR EFFICIENTLY PROVIDING FORMATTING INFORMATION FOR STORED RECORDS | EMC Corporation |
| 08802764 | 6105132 | COMPUTER NETWORK GRADED AUTHENTICATION SYSTEM AND METHOD | EMC Corporation |
| 08806390 | 6002869 | SYSTEM AND METHOD FOR AUTOMATICALLY TESTING SOFTWARE PROGRAMS | EMC Corporation |
| 08806505 | 6263376 | GENERIC RUN-TIME BINDING INTERPRETER | EMC Corporation |
| 08807452 | 5896548 | DATA TRANSFERRING SYSTEM HAVING FOREGROUND AND BACKGROUND MODES AND UPON DETECTING SIGNIFICANT MODES AND UPON DETECTING SIGNIFICANT PATTERN OF ACCESS IN FOREGROUND MODE TO CHANGE BACKGROUND MODE CONTROL PARAMETERS | EMC Corporation |
| 08808723 | 5860003 | I/O CONTROLLER SOFTWARE WITH EACH I/O COMMAND HAVING A PLURALITY OF NETS, EACH WITH A GROUP OF THREADS | EMC Corporation |
| 08808846 | 5922074 | METHOD OF AND APPARATUS FOR PROVIDING SECURE DISTRIBUTED DIRECTORY SERVICES AND PUBLIC KEY INFRASTRUCTURE | EMC Corporation |
| 08815193 | 6161165 | HIGH PERFORMANCE DATA PATH WITH XOR ON THE FLY | EMC Corporation |
| 08819578 | 6115039 | PROCESSES AND APPARATUSES FOR CREATING NON-NATIVE DISPLAYS ON A COMPUTER | EMC Corporation |
| 08821496 | 5900009 | RECORD LEVEL CACHING SYSTEM AND METHOD FOR DIGITAL DATA STORAGE SUBSYSTEM | EMC Corporation |
| 08822388 | 6047353 | METHOD AND APPARATUS FOR MONITORING OF HOST ACTIVITIES RELATING TO AN ATTACHED STORAGE DEVICE | EMC Corporation |
| 08822680 | 5913227 | AGENT-IMPLEMENTED LOCKING MECHANISM | EMC Corporation |
| 08822971 | 6321308 | METHOD AND APPARATUS FOR MANAGING ACCESS REQUESTS FROM A PLURALITY OF DEVICES USING DUAL LEVEL QUEUE LOCKING SCHEME AND A DOUBLY-LINKED CIRCULAR QUEUE | EMC Corporation |
| 08824081 | 5864865 | MANAGEMENT INFORMATION BASE LISTING VIEWER | EMC Corporation |
| 08825164 | 6154853 | METHOD AND APPARATUS FOR DYNAMIC SPARING IN A RAID STORAGE SYSTEM | EMC Corporation |
| 08829559 | 6018809 | APPARATUS AND METHOD FOR CAPTURING INFORMATION OFF A PLURALITY OF BI-DIRECTIONAL COMMUNICATION BUSES | EMC Corporation |
| 08831393 | 5940083 | MULTI-CURVE RENDERING MODIFICATION APPARATUS AND METHOD | EMC Corporation |
| 08831481 | 5894485 | DISK ARRAY WRITE PROTECTION AT THE SUB-UNIT LEVEL | EMC Corporation |
| 08831503 | 5943689 | ON-DEMAND INITIALIZATION OF MEMORY LOCATIONS AS THEY ARE REQUESTED COMMAND | EMC Corporation |
| 08835772 | 5974515 | SYSTEM FOR DISTRIBUTING VOLUMES TO AN HSM SYSTEM FRONT END | EMC Corporation |
| 08842064 | 5956745 | SYSTEM AND METHOD FOR AUTOMATICALLY RESIZING A DISK DRIVE VOLUME | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 08850878 | 5935260 | METHOD AND APPARATUS FOR PROVIDING SYSTEM LEVEL ERRORS IN A LARGE DISK ARRAY STORAGE SYSTEM | EMC Corporation |
| 08851045 | 5854759 | METHODS AND APPARATUS FOR EFFICIENT FINITE FIELD BASIS CONVERSION | EMC Corporation |
| 08851560 | 5892915 | SYSTEM HAVING CLIENT SENDING EDIT COMMANDS TO SERVER DURING TRANSMISSION OF CONTINUOUS MEDIA FROM ONE CLIPIN PLAY LIST FOR EDITING THE PLAY LIST | EMC Corporation |
| 08853964 | 6021436 | AUTOMATIC METHOD FOR POLLING A PLURALITY OF HETEROGENEOUS COMPUTER SYSTEMS | EMC Corporation |
| 08868005 | 5958066 | ON-LINE SCANNING AND MAINTENANCE OF A DISK DRIVE ARRAY | EMC Corporation |
| 08868305 | 5968184 | IMPROVED MAINTENANCE COMMAND STRUCTURE AND EXECUTION | EMC Corporation |
| 08868309 | 5898863 | METHOD AND APPARATUS FOR DETERMINING I/O SIZE DISTRIBUTION OF AN INPUT/OUTPUT SYSTEM AND ITS USE FOR LOAD SIMULATION | EMC Corporation |
| 08874696 | 6098149 | METHOD AND APPARATUS FOR EXTENDING COMMANDS IN A CACHED DISK ARRAY | EMC Corporation |
| 08877092 | 6275897 | REMOTE CACHE UTILIZATION FOR MIRRORED MASS STORAGE SUBSYSTEM | EMC Corporation |
| 08877631 | 6118633 | PLASTIC DISK WITH HUB AND DISK DRIVE FOR USING SAME | EMC Corporation |
| 08877700 | 6003114 | CACHING SYSTEM AND METHOD PROVIDING AGGRESSIVE PREFETCH | EMC Corporation |
| 08882182 | 6145006 | METHOD AND APPARATUS FOR COORDINATING LOCKING OPERATIONS OF HETEROGENEOUS HOST COMPUTERS ACCESSING A STORAGE SUBSYSTEM | EMC Corporation |
| 08884739 | 6350140 | I/O ADAPTER CARD MOUNTING PLATE | EMC Corporation |
| 08884740 | 6742068 | DATA SERVER WITH HOT REPLACEABLE PROCESSING UNIT MODULES | EMC Corporation |
| 08884890 | 6076126 | SOFTWARE LOCKING MECHANISM FOR LOCKING SHARED RESOURCES IN A DATA PROCESSING SYSTEM | EMC Corporation |
| 08885263 | 6311252 | METHOD AND APPARATUS FOR MOVING DATA BETWEEN STORAGE LEVELS OF A HIERARCHICALLY ARRANGED DATA STORAGE SYSTEM | EMC Corporation |
| 08885379 | 6523112 | OPERATING SYSTEM SOFTWARE BOOT PROGRAM EXECUTION METHOD | EMC Corporation |
| 08885380 | 6311256 | COMMAND INSERTION AND REORDERING AT THE STORAGE CONTROLLER | EMC Corporation |
| 08885381 | 5971804 | BACKPLANE HAVING STRIP TRANSMISSION LINE ETHERNET BUS | EMC Corporation |
| 08885383 | 6078503 | PARTITIONABLE CABINET | EMC Corporation |
| 08885386 | 6016252 | CABLE MANAGEMENT SYSTEM | EMC Corporation |
| 08885630 | 6023148 | POWER MANAGEMENT SYSTEM WITH REDUNDANT, INDEPENDENTLY REPLACEABLE BATTERY CHARGERS | EMC Corporation |
| 08885639 | 6067199 | METHOD AND APPARATUS FOR INCREASING DISC DRIVE PERFORMANCE | EMC Corporation |

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| 08885697 | 6009535 | SCSI ADAPTOR FAILOVER FOR A DISK DRIVE SYSTEM | EMC Corporation |
| 08885698 | 6891824 | AUDIBLE COMMUNICATION WITH A MODEM OVER A WIDE AREA NETWORK | EMC Corporation |
| 08889905 | 5887151 | METHOD AND APPARATUS FOR PERFORMING A MODIFIED PREFETCH WHICH SENDS A LIST IDENTIFYING A PLURALITY OF DATA BLOCKS | EMC Corporation |
| 08893263 | 6249755 | APPARATUS AND METHOD FOR EVENT CORRELATION AND PROBLEM REPORTING | EMC Corporation |
| 08917324 | 6044468 | SECURE TRANSMISSION USING AN ORDINARILY INSECURE NETWORK COMMUNICATION PROTOCOL SUCH AS SNMP | EMC Corporation |
| 08918238 | 6182166 | METHOD/APPARATUS FOR INTERFACING TWO REMOTELY DISPOSED DEVICES COUPLED VIA TRANSMISSION MEDIUM WITH FIRST AND SECOND COMMANDS TRANSMITTED WITHOUT FIRST CHECKING RECEIVING DEVICE FOR READINESS | EMC Corporation |
| 08920848 | 6185069 | MAGNETIC DISK CARTRIDGE HAVING A FLEXIBLE DISK ANTI-DRIFT MECHANISM | EMC Corporation |
| 08920932 | 6134081 | MEDIA HUB MOUNTING SYSTEM FOR MINIMIZING Z-AXIS TRANSLATION DURING CARTRIDGE INSERTION AND EJECTION TRANSLATION | EMC Corporation |
| 08922227 | 6076143 | METHOD AND APPARATUS FOR MANAGING THE PHYSICAL STORAGE LOCATIONS FOR BLOCKS OF INFORMATION IN A STORAGE SYSTEM TO INCREASE SYSTEM PERFORMANCE | EMC Corporation |
| 08924013 | 6172849 | APPARATUS FOR RETAINING A DISK CARTRIDGE SHUTTER IN A CLOSED POSITION | EMC Corporation |
| 08925026 | 6230200 | DYNAMIC MODELING FOR RESOURCE ALLOCATION IN A FILE SERVER | EMC Corporation |
| 08931272 | 6097562 | DISK DRIVE FOR DETECTING A RETROREFLECTIVE MARKER ON A DATA STORAGE CARTRIDGE | EMC Corporation |
| 08932660 | 6055603 | METHOD AND APPARATUS FOR PERFORMING PRE-REQUEST OPERATIONS IN A CACHED DISK ARRAY STORAGE SYSTEM | EMC Corporation |
| 08935458 | 6041394 | DISK ARRAY WRITE PROTECTION AT THE SUB-UNIT LEVEL | EMC Corporation |
| 08936122 | 6112257 | DYNAMIC MIRROR SERVICE POLICY | EMC Corporation |
| 08936672 | 5886930 | BIT INTERLEAVING IN A MEMORY WHICH USES MULTI-BIT DRAMS | EMC Corporation |
| 08936695 | 5878059 | METHOD AND APPARATUS FOR PIPELINING AN ERROR DETECTION ALGORITHM ON AN N-BIT WORD STORED IN MEMORY | EMC Corporation |
| 08936970 | 6091563 | LATENT ILLUMINANCE DISCRIMINATION MARKER SYSTEM FOR DATA STORAGE CARTRIDGES | EMC Corporation |
| 08936973 | 6205529 | METHOD AND APPARATUS FOR DEFRAGMENTING A STORAGE DEVICE USING A COPY FUNCTION IN THE DEVICE CONTROL LOGIC | EMC Corporation |

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|---|---|---|---|
| 08937467 | 6209059 | METHOD & APPARATUS FOR THE ON-LINE RECONFIGURATION OF THE LOGICAL VOLUMES OF A DATA STORAGE SYSTEM | EMC Corporation |
| 08937897 | 6101588 | DEVICE LEVEL BUSY ARRANGEMENT FOR MASS STORAGE SUBSYSTEM INCLUDING A PLURALITY OF DEVICES | EMC Corporation |
| 08937920 | 6223269 | STACKED MAPPED STORAGE SYSTEM | EMC Corporation |
| 08938723 | 6192408 | NETWORK FILE SERVER SHARING LOCAL CACHES OF FILE ACCESS INFORMATION IN DATA PROCESSORS ASSIGNED TO RESPECTIVE FILE SYSTEMS | EMC Corporation |
| 08938859 | 6275953 | RECOVERY FROM FAILURE OF A DATA PROCESSOR IN A NETWORK SERVER | EMC Corporation |
| 08941439 | 6148369 | METHOD AND APPARATUS FOR PROVIDING LOGICAL DEVICES SPANNING SEVERAL PHYSICAL VOLUMES | EMC Corporation |
| 08941506 | 5951693 | DATA STORAGE SYSTEM HAVING DATA RECONSTRUCTION | EMC Corporation |
| 08941509 | 5953265 | MEMORY HAVING ERROR DETECTION AND CORRECTION | EMC Corporation |
| 08942165 | 6014667 | SYSTEM AND METHOD FOR CACHING IDENTIFICATION AND LOCATION INFORMATION IN A COMPUTER NETWORK | EMC Corporation |
| 08944606 | 6061761 | METHOD FOR EXCHANGING LOGICAL VOLUMES IN A DISK ARRAY STORAGE DEVICE IN RESPONSE TO STATISTICAL ANALYSES AND PRELIMINARY TESTING | EMC Corporation |
| 08948752 | 5913073 | INPUT/OUTPUT DRIVER FOR BENCHMARK TESTING | EMC Corporation |
| 08954712 | 6076163 | SECURE USER IDENTIFICATION BASED ON CONSTRAINED POLYNOMIALS | EMC Corporation / NTRU Cryptosystems, Inc. |
| 08961292 | 6104608 | NOISE REDUCTION HOOD FOR AN ELECTRONIC SYSTEM ENCLOSURE | EMC Corporation |
| 08962637 | 6170055 | SYSTEM FOR COMPUTER RECOVERY USING REMOVABLE HIGH CAPACITY MEDIA | EMC Corporation |
| 08964442 | 6028725 | METHOD AND APPARATUS FOR INCREASING DISK DRIVE PERFORMANCE | EMC Corporation |
| 08966345 | 5973690 | FRONT END/BACK END DEVICE VISUALIZATION AND MANIPULATION | EMC Corporation |
| 08966633 | 6145089 | SERVER FAIL-OVER SYSTEM | EMC Corporation |
| 08968561 | 6157514 | METHOD AND APPARATUS FOR READ-WRITE PROTECTION | EMC Corporation |
| 08970069 | 6105069 | LICENSING CONTROLLER USING NETWORK DIRECTORY SERVICES | EMC Corporation |
| 08975892 | 6179631 | ELECTRICAL CONTACT FOR A PRINTED CIRCUIT BOARD | EMC Corporation |
| 08977268 | 6035306 | METHOD FOR IMPROVING PERFORMANCE OF LARGE DATABASES | EMC Corporation |
| 08980633 | 6317759 | METHOD AND APPARATUS FOR PROVIDING AN APPLICATIONS DEVELOPMENT SYSTEM FOR INTERNET BASED APPLICATIONS | EMC Corporation |

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| 08984342 | 6088224 | CABINET FOR STORING A PLURALITY OF PROCESSING UNIT MODULES | EMC Corporation |
| 08984343 | 5984634 | FAN ASSEMBLY FOR A PROCESSING UNIT CASE | EMC Corporation |
| 08988732 | 6138249 | METHOD AND APPARATUS FOR MONITORING COMPUTER SYSTEMS DURING MANUFACTURING, TESTING AND IN THE FIELD | EMC Corporation |
| 08990556 | 6018779 | SYSTEM FOR ENCAPSULATING A PLURALITY OF SELECTED COMMANDS WITHIN A SINGLE COMMAND AND TRANSMITTING THE SINGLE COMMAND TO A REMOTE DEVICE OVER A COMMUNICATION LINK THEREWITH | EMC Corporation |
| 08995188 | 5956288 | MODULAR MEMORY SYSTEM WITH SHARED MEMORY ACCESS | EMC Corporation |
| 08995452 | 6058451 | METHOD AND APPARATUS FOR REFRESHING A NON-CLOCKED MEMORY | EMC Corporation |
| 08995675 | 6084397 | VERIFICATION GAUGE FOR AN ELECTRONIC PACKAGE LEAD INSPECTION APPARATUS | EMC Corporation |
| 08996444 | 6151659 | DISTRIBUTED RAID STORAGE SYSTEM | EMC Corporation |
| 08996807 | 6397281 | BUS ARBITRATION SYSTEM | EMC Corporation |
| 08997215 | 6502149 | PLURAL BUS DATA STORAGE SYSTEM | EMC Corporation |
| 08998314 | 6341309 | FIREWALL SYSTEM FOR QUALITY OF SERVICE MANAGEMENT | EMC Corporation |
| 08998332 | 6119235 | METHOD AND APPARATUS FOR QUALITY OF SERVICE MANAGEMENT | EMC Corporation |
| 08998463 | 6076148 | MASS STORAGE SUBSYSTEM AND BACKUP ARRANGEMENT FOR DIGITAL DATA PROCESSING SYSTEM WHICH PERMITS INFORMATION TO BE BACKED UP WHILE HOST COMPUTER(S) CONTINUE(S) OPERATING IN CONNECTION WITH INFORMATION STORED ON MASS STORAGE SUBSYSTEM | EMC Corporation |
| 08998538 | 6105085 | LOCK MECHANISM FOR SHARED RESOURCES HAVING ASSOCIATED DATA STRUCTURE STORED IN COMMON MEMORY INCLUDE A LOCK PORTION AND A RESERVE PORTION | EMC Corporation |
| 08999044 | 6078953 | SYSTEM AND METHOD FOR MONITORING QUALITY OF SERVICE OVER NETWORK | EMC Corporation |
| 08999516 | 6292465 | LINEAR RULE BASED METHOD FOR BANDWIDTH MANAGEMENT | EMC Corporation |
| 08999519 | 6137777 | CONTROL TOOL FOR BANDWIDTH MANAGEMENT | EMC Corporation |
| 09/096777 | 6118636 | INTERTIAL LATCH MECHANISM WITH OPPOSING LATCH MEMBERS | EMC Corporation |
| 09001046 | 6317815 | METHOD AND APPARATUS FOR FORMATTING DATA IN A STORAGE DEVICE | EMC Corporation |
| 09001047 | 6088814 | METHOD AND APPARATUS FOR READING A NON-CONFIGURED DISK DRIVE IN AN AS/400 SYSTEM | EMC Corporation |
| 09001298 | 6233696 | DATA VERIFICATION AND REPAIR IN REDUNDANT STORAGE SYSTEMS | EMC Corporation |
| 09001327 | 6158042 | METHOD OF COUNTING BITS | EMC Corporation |
| 09001684 | 6195761 | METHOD AND APPARATUS FOR IDENTIFYING AND REPAIRING MISMATCHED DATA | EMC Corporation |
| 09001857 | 6167485 | ON-LINE DATA VERIFICATION AND REPAIR IN REDUNDANT STORAGE SYSTEMS | EMC Corporation |

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| 09002428 | 6088766 | METHOD FOR EXCHANGING DATA BLOCKS ON DISK STORAGE DEVICES UTILIZING DISK ACCESS STATISTICS AND TESTING FOR THE EFFECT OF A CHANGE | EMC Corporation |
| 09002712 | 6185661 | WORM MAGNETIC STORAGE DEVICE | EMC Corporation |
| 09003579 | 6014517 | AUTOMATIC CREATION OF C TO ASSEMBLER INTERFACE | EMC Corporation |
| 09004105 | 6725331 | METHOD AND APPARATUS FOR MANAGING THE DYNAMIC ASSIGNMENT OF RESOURCES IN A DATA STORAGE SYSTEM | EMC Corporation |
| 09006576 | 5996024 | METHOD AND APPARATUS FOR A SCSI APPLICATIONS SERVER WHICH EXTRACTS SCSI COMMANDS AND DATA FROM MESSAGE AND ENCAPSULATES SCSI RESPONSES TO PROVIDE TRANSPARENT OPERATION | EMC Corporation |
| 09009214 | 6188131 | CLIP RETAINING A HEATSINK ONTO A ELECTRONIC COMPONENT | EMC Corporation |
| 09011721 | 6122756 | HIGH AVAILABILITY COMPUTER SYSTEM AND METHODS RELATED THERETO | EMC Corporation |
| 09012849 | 6411924 | SYSTEM AND METHOD FOR LINGUISTIC FILTER AND INTERACTIVE DISPLAY | EMC Corporation |
| 09017175 | 6115211 | DATA STORAGE SYSTEM HAVING A CARTRIDGE HUB LOCKING MECHANISM | EMC Corporation |
| | | | |
| 09020048 | 6253273 | LOCK MECHANISM | EMC Corporation |
| 09024177 | 6442659 | A RAID-TYPE STORAGE SYSTEM AND TECHNIQUE | EMC Corporation |
| 09039020 | 6631477 | HOST SYSTEM FOR MASS STORAGE BUSINESS CONTINUANCE VOLUMES | EMC Corporation |
| 09041398 | 5953689 | BENCHMARK TOOL FOR A MASS STORAGE SYSTEM | EMC Corporation |
| 09041401 | 6408369 | INTERNAL COPY FOR A STORAGE CONTROLLER | EMC Corporation |
| 09045037 | 6138195 | METHOD AND APPARATUS FOR HOT-PLUGGING CIRCUIT BOARDS HAVING LOW VOLTAGE LOGIC PARTS INTO A HIGHER VOLTAGE BACKPLANE | EMC Corporation |
| 09050676 | 6324654 | COMPUTER NETWORK REMOTE DATA MIRRORING SYSTEM | EMC Corporation |
| 09052113 | 6249878 | DATA STORAGE SYSTEM | EMC Corporation |
| 09052209 | 6029166 | SYSTEM AND METHOD FOR GENERATING AN OPERATING SYSTEM-INDEPENDENT FILE MAP | EMC Corporation |
| 09052263 | 5936844 | MEMORY SYSTEM PRINTED CIRCUIT BOARD | EMC Corporation |
| 09052266 | 6195770 | DATA STORAGE SYSTEM | EMC Corporation |
| 09052267 | 6327676 | TEST EQUIPMENT | EMC Corporation |
| 09052268 | 5943287 | FAULT TOLERANT MEMORY SYSTEM | EMC Corporation |
| 09052318 | 6360330 | SYSTEM AND METHOD FOR BACKING UP DATA STORED IN MILTIPLE MIRRORS ON A MASS STORAGE SUBSYSTEM UNDER CONTROL OF A BACKUP SERVER | EMC Corporation |
| 09052325 | 7398286 | METHOD AND SYSTEM FOR ASSISTING IN BACKUPS AND RESTORE OPERATIONS OVER DIFFERENT CHANNELS | EMC Corporation |

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| 09052356 | 6161111 | SYSTEM AND METHOD FOR PERFORMING FILE HANDLING OPERATIONS IN A DIGITAL DATA PROCESSING SYSTEM USING AN OPERATING SYSTEM-INDEPENDENT FILE MAP | EMC Corporation |
| 09052579 | 6047294 | LOGICAL RESTORE FROM A PHYSICAL BACKUP IN A COMPUTER SYSTEM | EMC Corporation |
| 09053420 | 6157991 | METHOD AND APPARATUS FOR ASYNCHRONOUSLY UPDATING A MIRROR OF A SOURCE DEVICE | EMC Corporation |
| 09053964 | 6070224 | VIRTUAL TAPE SYSTEM | EMC Corporation |
| 09057906 | 6359900 | METHOD AND SYSTEM FOR CONTROLLING ACCESS TO A RESOURCE | EMC Corporation |
| 09058590 | 6775739 | MIRRORED DRIVE PERFORMANCE USING MATCHING ALGORITHMS | EMC Corporation |
| 09069608 | 6161216 | SOURCE CODE DEBUGGING TOOL | EMC Corporation |
| 09073714 | 6122685 | SYSTEM FOR IMPROVING THE PERFORMANCE OF A DISK STORAGE DEVICE BY RECONFIGURING A LOGICAL VOLUME OF DATA IN RESPONSE TO THE TYPE OF OPERATIONS BEING PERFORMED | EMC Corporation |
| 09085592 | 6882620 | TOKEN EXCHANGE SYSTEM WITH FAULT PROTECTION | EMC Corporation |
| 09085719 | 6141707 | INPUT/OUTPUT REQUEST ALLOCATION BY ESTABLISHING MASTER COMMAND QUEUE AMONG PLURALITY OF COMMAND QUEUES TO RECEIVE AND STORE COMMANDS, DETERMINE LOGICAL VOLUME, AND FORWARDING COMMAND TO DETERMINED LOGICAL VOLUME | EMC Corporation |
| 09094649 | 6269163 | ENHANCED BLOCK CIPHERS WITH DATA-DEPENDENT ROTATIONS | EMC Corporation |
| 09096781 | 6204982 | METHOD AND APPARATUS FOR CARTRIDGE EJECTION AND OVERWRITE PROTECTION | EMC Corporation |
| 09096954 | 6178067 | SIDE EDGE ACCESSIBLE DISK CARTRIDGE SHUTTER LATCH ASSEMBLY | EMC Corporation |
| 09103996 | 6195703 | DYNAMIC ROUTING FOR PERFORMANCE PARTITIONING IN A DATA PROCESSING NETWORK | EMC Corporation |
| 09104597 | 6438595 | LOAD BALANCING USING DIRECTORY SERVICES IN A DATA PROCESSING SYSTEM | EMC Corporation |
| 09105064 | 6128750 | FAIL-OVER SWITCHING SYSTEM | EMC Corporation |
| 09106025 | 6260120 | STORAGE MAPPING AND PARTITIONING AMONG MULTIPLE HOST PROCESSORS | EMC Corporation |
| 09106293 | 6295575 | CONFIGURING VECTORS OF LOGICAL STORAGE UNITS FOR DATA STORAGE PARTITIONING AND SHARING | EMC Corporation |
| 09106299 | 6421711 | VIRTUAL PORTS FOR PARTITIONING OF DATA STORAGE | EMC Corporation |
| 09107055 | 6061966 | ELECTRICAL CABINET HAVING A DOOR STOP | EMC Corporation |
| 09107056 | 6386120 | ELECTRICAL CABINET HAVING A PIVOTING PLATFORM | EMC Corporation |
| 09107057 | 6520608 | ELECTRICAL CABINET HAVING PRINTED CIRCUIT BOARD RECEIVING GUIDE SLOTS | EMC Corporation |
| 09107067 | 6262894 | ELECTRICAL CABINET HAVING AN EXTENDABLE BRACKET SUPPORTING A BATTERY | EMC Corporation |

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| 09107202 | 6493825 | AUTHENTICATION OF A HOST PROCESSOR REQUESTING SERVICE IN A DATA PROCESSING NETWORK | EMC Corporation |
| 09107537 | 5987550 | LOCK MECHANISM FOR SHARED RESOURCES IN A DATA PROCESSING SYSTEM | EMC Corporation |
| 09107538 | 6329985 | METHOD AND APPARATUS FOR GRAPHICALLY DISPLAYING MAPPING OF A LOGICAL OBJECT | EMC Corporation |
| 09107613 | 6282602 | METHOD AND APPARATUS FOR MANIPULATING LOGICAL OBJECTS IN A DATA STORAGE SYSTEM | EMC Corporation |
| 09107617 | 6216202 | METHOD AND APPARATUS FOR MANAGING VIRTUAL STORAGE DEVICES IN A STORAGE SYSTEM | EMC Corporation |
| 09107618 | 7756986 | METHOD AND APPARATUS FOR PROVIDING DATA MANAGEMENT FOR A STORAGE SYSTEM COUPLED TO A NETWORK | EMC Corporation |
| 09107679 | 6366986 | METHOD AND APPARATUS FOR DIFFERENTIAL BACKUP IN A COMPUTER STORAGE SYSTEM | EMC Corporation |
| 09107684 | 6883063 | METHOD AND APPARATUS FOR INITIALIZING LOGICAL OBJECTS IN A DATA STORAGE SYSTEM | EMC Corporation |
| 09107741 | 6396256 | POWER SUPPLY SLEW TIME TESTING OF ELECTRONIC CIRCUITS | EMC Corporation |
| 09107742 | 6269381 | METHOD AND APPARATUS FOR BACKING UP DATA BEFORE UPDATING THE DATA AND FOR RESTORING FROM THE BACKUPS | EMC Corporation |
| 09107792 | 6484234 | METHOD AND APPARATUS FOR EFFICIENTLY DESTAGING DATA FROM A CACHE TO TWO OR MORE NON-CONTIGUOUS STORAGE LOCATIONS | EMC Corporation |
| 09107869 | 6169249 | ELECTRICAL CABINET HAVING A BULKHEAD WITH ELECTRICAL CONNECTORS | EMC Corporation |
| 09107884 | 6353837 | METHOD & APPARATUS PROVIDING MASS STORAGE ACCESS FROM SYSTEMS USING DIFFERENT META-DEVICE FORMATS | EMC Corporation |
| 09107891 | 6141773 | METHOD AND APPARATUS FOR UNDOING CHANGES TO COMPUTER MEMORY | EMC Corporation |
| 09107923 | 6393540 | MOVING A LOGICAL OBJECT FROM A SET OF SOURCE LOCATIONS TO A SET OF DESTINATION LOCATIONS USING A SINGLE COMMAND | EMC Corporation |
| 09108038 | 6542909 | SYSTEM FOR DETERMINING MAPPING OF LOGICAL OBJECTS IN A COMPUTER SYSTEM | EMC Corporation |
| 09108075 | 6263445 | METHOD AND APPARATUS FOR AUTHENTICATING CONNECTIONS TO A STORAGE SYSTEM COUPLED TO A NETWORK | EMC Corporation |
| 09111211 | 6324604 | MAGNETIC DISK STORAGE FOR STORING DATA IN DISK BLOCK SIZE FROM FIXED LENGTH OF HOST BLOCK IN NON-INTEGER MULTIPLE OF THE DISK BLOCK SIZE | EMC Corporation |
| 09127523 | 6233589 | METHOD AND SYSTEM FOR REFLECTING DIFFERENCES BETWEEN TWO FILES | EMC Corporation |
| 09127999 | 6266740 | DEVICE SEQUENCING AND PLACEMENT PROTECTION USING A DIGITAL SIGNATURE | EMC Corporation |
| 09133564 | 6269431 | VIRTUAL STORAGE AND BLOCK LEVEL DIRECT ACCESS OF SECONDARY STORAGE RECOVERY OF BACKUP DATA | EMC Corporation |

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| 09133701 | 6366987 | COMPUTER DATA STORAGE PHYSICAL BACKUP AND LOGICAL RESTORE | EMC Corporation |
| 09133885 | 6353878 | REMOTE CONTROL OF BACKUP MEDIA IN A SECONDARY STORAGE SUBSYSTEM THROUGH ACCESS TO A PRIMARY STORAGE SUBSYSTEM | EMC Corporation |
| 09134012 | 6157920 | EXECUTABLE DIGITAL CASH FOR ELECTRONIC COMMERCE | EMC Corporation |
| 09135290 | 5959932 | METHOD & APPARATUS FOR DETECTING ERRORS IN THE WRITING OF DATA TO A MEMORY | EMC Corporation |
| 09137852 | 6141188 | SECONDARY ACTUATOR | EMC Corporation |
| 09143683 | 6189071 | METHOD FOR MAXIMIZING SEQUENTIAL OUTPUT IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| 09143684 | 6237063 | LOAD BALANCING METHOD FOR EXCHANGING DATA IN DIFFERENT PHYSICAL DISK STORAGE DEVICES IN A DISK ARRAY STORAGE DEVICE INDEPENDENTLY OF DATA PROCESSING SYSTEM OPERATION | EMC Corporation |
| 09143698 | 6308284 | METHOD AND APPARATUS FOR MAINTAINING DATA COHERENCY | EMC Corporation |
| 09144741 | 6201690 | RACK CONSOLE ASSEMBLY | EMC Corporation |
| 09156747 | 6107855 | APPARATUS AND METHOD FOR MECHANICAL HARVESTING OF FRUIT | EMC Corporation |
| 09160727 | 6359745 | LATENT ILLUMINANCE DISCRIMINATION MARKER SYSTEM FOR DATA STORAGE CARTRIDGES | EMC Corporation |
| 09160811 | 6181662 | LATENT IRRADIANCE DISCRIMINATION METHOD AND MARKER SYSTEM FOR CARTRIDGELESS DATA STORAGE DISKS | EMC Corporation |
| 09177013 | 6393447 | METHOD AND APPARATUS FOR EXTRACTING UNBIASED RANDOM BITS FROM A POTENTIALLY BIASED SOURCE OF RANDOMNESS | EMC Corporation |
| 09182265 | 6460141 | SECURITY AND ACCESS MANAGEMENT SYSTEM FOR WEB-ENABLED AND NON-WEB-ENABLED APPLICATIONS AND CONTENT ON A COMPUTER NETWORK | EMC Corporation |
| 09182930 | 6166884 | APPARATUS AND SYSTEM FOR STABILIZING A DISK MEDIA SURFACE FOR ENGAGEMENT WITH A DRIVE HEAD | EMC Corporation |
| 09183873 | 6160680 | TWO-PIECE MEDIA HUB AND METHODS OF ATTACHING SAME TO A MEDIUM | EMC Corporation |
| 09183874 | 6583945 | METHOD FOR IRREVERSIBLY WRITE-SECURING A MAGNETIC STORAGE CARTRIDGE | EMC Corporation |
| 09183903 | 6320717 | VELOCITY LIMITED LOADING OF READ HEADS ONTO DISK DRIVE MEDIA | EMC Corporation |
| 09191876 | 6115219 | A READ WRITE HEAD ASSEMBLY THAT HAS A PAIR OF OPPOSED SLIDERS THAT EACH HAVE A TRANSVERSE SLOTTED RAIL ALIGNED WITH A RAIL IN THE OPPOSING SLIDER THAT DOES NOT HAVE A TRANSVERSE SLOTTED RAIL | EMC Corporation |
| 09191903 | 6129440 | SWITCH-OPERATED MEMBER WITH STATUS LIGHT PIPE INCORPORATED THEREIN | EMC Corporation |
| 09195346 | 6286022 | EFFICIENT FINITE FIELD BASIS CONVERSION INVOLVING A DUAL BASIS | EMC Corporation |

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| 09195527 | 6446052 | DIGITAL COIN TRACING USING TRUSTEE TOKENS | EMC Corporation |
| 09196384 | 6564219 | METHOD AND APPARATUS FOR OBTAINING AN IDENTIFIER FOR A LOGICAL UNIT OF DATA IN A DATABASE | EMC Corporation |
| 09196651 | 6385626 | METHOD AND APPARATUS FOR IDENTIFYING CHANGES TO A LOGICAL OBJECT BASED ON CHANGES TO THE LOGICAL OBJECT AT PHYSICAL LEVEL | EMC Corporation |
| 09205063 | 6502131 | DIRECTORY ENABLED POLICY MANAGEMENT TOOL FOR INTELLIGENT TRAFFIC MANAGEMENT | EMC Corporation |
| 09209867 | 6178058 | OFF-TRACK WRITE PROTECTION METHOD AND SYSTEM FOR INDUCED MECHANICAL DISTURBANCE ON A DISK DRIVE | EMC Corporation |
| 09211026 | 6356943 | DISTANCE LEARNING IMPLEMENTATION | EMC Corporation |
| 09211131 | 6240511 | METHOD AND APPARATUS FOR DETECTING SYSTEM CONFIGURATION CHANGES | EMC Corporation |
| 09211961 | 6199839 | VIBRATION DAMPING MECHANISM | EMC Corporation |
| 09213073 | 6233730 | REVISION COMPATIBILITY BETWEEN PROGRAMS | EMC Corporation |
| 09213139 | 6397273 | SYSTEM HAVING AN ENHANCED PARITY MECHANISM IN A DATA ASSEMBLER/DISASSEMBLER FOR USE IN A PIPELINE OF A HOST-STORAGE SYSTEM INTERFACE TO GLOBAL MEMORY | EMC Corporation |
| 09213613 | 7233977 | MESSAGING MECHANISM EMPLOYING MAILBOXES FOR INTER PROCESSOR COMMUNICATIONS | EMC Corporation |
| 09215840 | 6317805 | DATA TRANSFER INTERFACE HAVING PROTOCOL CONVERSION DEVICE AND UPPER, LOWER, MIDDLE MACHINES: WITH MIDDLE MACHINE ARBITRATING AMONG LOWER MACHINE SIDE REQUESTERS INCLUDING SELECTIVE ASSEMBLY/DISASSEMBLY REQUESTS | EMC Corporation |
| 09216174 | 6711612 | A SYSTEM FOR FACILITATING THE TRANSFER OF MANAGEMENT INFORMATION FROM A REMOTE MASS STORAGE SUBSYSTEM OVER A SWITCHING FABRIC OR SELECTIVELY OVER A PRIVATE LINK TO A CENTRAL LOCATION FOR SERVICING | EMC Corporation |
| 09216254 | 6308181 | ACCESS CONTROL WITH DELAYED BINDING OF OBJECT IDENTIFIERS | EMC Corporation |
| 09216329 | 6279050 | DATA TRANSFER APPARATUS HAVING UPPER, LOWER, MIDDLE STATE MACHINES, WITH MIDDLE STATE MACHINE ARBITRATING AMONG LOW STATE MACHINE SIDE REQUESTERS INCLUDING SELECTIVE ASSEMBLY/DISASSEMBLY REQUESTS | EMC Corporation |
| 09219026 | 6487049 | DRIVE HEADS FOR STORAGE MEDIA DRIVE | EMC Corporation |
| 09221556 | 6389442 | EFFICIENT FINITE FIELD MULTIPLICATION IN NORMAL BASIS | EMC Corporation |
| 09222645 | 6418511 | LARGE CAPACITY DATA STORAGE SYSTEMS USING REDUNDANT BUSES | EMC Corporation |

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| 09222646 | 6230221 | DATA STORAGE SYSTEM HAVING A HOST COMPUTER COUPLED TO BANK OF DISK DRIVES THROUGH INTERFACE COMPRISING PLURALITY OF DIRECTORS, BUSSES, AND REFERENCE VOLTAGE GENERATORS | EMC Corporation |
| 09223092 | 6314503 | METHOD AND APPARATUS FOR MANAGING DATA PLACED ON A STORAGE SUBSYSTEM USING A LAYERED DEVICE DRIVER | EMC Corporation |
| 09223110 | 6230217 | DATA STORAGE SYSTEM HAVING A HOST COMPUTER COUPLED TO BANK OF DISK DRIVES THROUGH INTERFACE COMPRISING PLURALITY OF DIRECTORS, BUSES, AND PCB CONNECTORS | EMC Corporation |
| 09223115 | 6289401 | DATA STORAGE SYSTEM HAVING A HOST COMPUTER COUPLED TO BANK OF DISK DRIVES THROUGH INTERFACE COMPRISING PLURALITY OF DIRECTORS, TWO PAIRS OF BUSES, AND MEMORY SECTIONS | EMC Corporation |
| 09223126 | 6457139 | METHOD AND APPARATUS FOR OPTIMIZING A LOGICAL VOLUME MANAGER OR DEVICE DRIVER | EMC Corporation |
| 09223417 | 6493795 | DATA STORAGE SYSTEM | EMC Corporation |
| 09223519 | 6389494 | SYSTEM FOR INTERFACING A DATA STORAGE SYSTEM TO A HOST UTILIZING A PLURALITY OF BUSSES FOR CARRYING END-USER DATA AND A SEPARATE BUS FOR CARRYING INTERFACE STATE DATA | EMC Corporation |
| 09223596 | 6341317 | METHOD AND APPARATUS FOR MANAGING A LOG OF INFORMATION IN A COMPUTER SYSTEM INCLUDING AN INTELLIGENT STORAGE SYSTEM | EMC Corporation |
| 09223896 | 6385706 | APPARATUS AND METHODS FOR COPYING A LOGICAL OBJECT TO A PRIMARY STORAGE DEVICE USING A MAP OF A STORAGE LOCATION | EMC Corporation |
| 09223998 | 6434637 | METHOD AND APPARATUS FOR BALANCING WORKLOADS AMONG PATHS IN A MULTI-PATH COMPUTER SYSTEM BASED ON THE STATE OF PREVIOUS I/O OPERATIONS (AS AMENDED) | EMC Corporation |
| 09224194 | 6539451 | DATA STORAGE SYSTEM HAVING MASTER-SLAVE ARBITERS | EMC Corporation |
| 09224637 | 7107395 | APPARATUS AND METHODS FOR OPERATING A COMPUTER STORAGE SYSTEM | EMC Corporation |
| 09224701 | 6061274 | METHODS AND APPARATUS FOR MESSAGE TRANSFER IN COMPUTER STORAGE SYSTEM | EMC Corporation |
| 09224789 | 6449652 | METHOD AND APPARATUS FOR PROVIDING SECURE ACCESS TO A COMPUTER SYSTEM RESOURCE | EMC Corporation |
| 09224830 | 6407671 | DETECTION SYSTEM FOR AN ELECTRONIC ENCLOSURE | EMC Corporation |
| 09224896 | 6487561 | APPARATUS AND METHODS FOR COPYING, BACKING UP, AND RESTORING DATA USING A BACKUP SEGMENT SIZE LARGER THAN THE STORAGE BLOCK SIZE | EMC Corporation |
| 09224897 | 6397308 | APPARATUS AND METHOD FOR DIFFERENTIAL BACKUP AND RESTORATION OF DATA IN A COMPUTER STORAGE SYSTEM | EMC Corporation |

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| 09224921 | 6311326 | ONLINE DEBUGGING AND TRACING SYSTEM AND METHOD | EMC Corporation |
| 09224968 | 6262668 | DETECTION SYSTEM FOR AN ELECTRONIC ENCLOSURE | EMC Corporation |
| 09224969 | 6369594 | TEST CLIP FOR ELECTRICAL TESTING OF AN ELECTRICAL COMPONENT | EMC Corporation |
| 09224973 | 6360319 | METHOD AND APPARATUS FOR STORING AND RETRIEVING SYSTEM REVISION INFORMATION | EMC Corporation |
| 09225033 | 6397295 | CACHE MECHANISM FOR SHARED RESOURCES IN A MULTIBUS DATA PROCESSING SYSTEM | EMC Corporation |
| 09225461 | 6529944 | HOST SYSTEM FOR REMOTE CONTROL OF MASS STORAGE VOLUMES USING CASCADING COMMANDS | EMC Corporation |
| 09225577 | 6718347 | METHOD AND APPARATUS FOR MAINTAINING COHERENCE AMONG COPIES OF A DATABASE SHARED BY MULTIPLE COMPUTERS | EMC Corporation |
| | | | |
| 09236366 | 6807632 | CONTENT ADDRESSABLE INFORMATION ENCAPSULATION, REPRESENTATION, AND TRANSFER | EMC Corporation |
| 09247902 | 6104561 | READ/WRITE PROTECT SCHEME FOR A DISK CARTRIDGE AND DRIVE | EMC Corporation |
| 09251812 | 6209002 | METHOD AND APPARATUS FOR CASCADING DATA THROUGH REDUNDANT DATA STORAGE UNITS | EMC Corporation |
| 09255486 | 6397307 | METHOD AND SYSTEM FOR MIRRORING AND ARCHIVING MASS STORAGE | EMC Corporation |
| 09255614 | 6286010 | METHODS AND APPARATUSES FOR INTERACTION BETWEEN SCHEMATA | EMC Corporation |
| 09261542 | 6324581 | FILE SERVER SYSTEM USING FILE SYSTEM STORAGE, DATA MOVERS, AND AN EXCHANGE OF META DATA AMONG DATA MOVERS FOR FILE LOCKING AND DIRECT ACCESS TO SHARED FILE SYSTEMS | EMC Corporation |
| 09261621 | 6973455 | FILE SERVER SYSTEM PROVIDING DIRECT DATA SHARING BETWEEN CLIENTS WITH A SERVER ACTING AS AN ARBITER AND COORDINATOR | EMC Corporation |
| 09261626 | 6453354 | FILE SERVER SYSTEM USING CONNECTION-ORIENTED PROTOCOL AND SHARING DATA SETS AMONG DATA MOVERS | EMC Corporation |
| 09268142 | 6304986 | METHOD AND APPARATUS FOR INSPECTING RECORDING MEDIUM FOR DEFECTS | EMC Corporation |
| 09268416 | 6392872 | COMPUTER SYSTEM | EMC Corporation |
| 09268494 | 6424999 | SYSTEM AND METHOD FOR RESTORING PREVIOUSLY BACKED-UP DATA IN A MASS STORAGE SUBSYSTEM | EMC Corporation |
| 09271585 | 6560617 | OPERATION OF A STANDBY SERVER TO PRESERVE DATA STORED BY A NETWORK SERVER | EMC Corporation |
| 09272522 | 6446253 | MECHANISM FOR ACHIEVING TRANSPARENT NETWORK COMPUTING | EMC Corporation |
| 09274532 | 6532451 | NESTED STRONG LOADER APPARATUS AND METHOD | EMC Corporation |

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| 09274696 | 6701433 | METHOD AND APPARATUS FOR ESCROWING PROPERTIES USED FOR ACCESSING EXECUTABLE MODULES | EMC Corporation |
| 09274971 | 6615350 | MODULE AUTHENTICATION AND BINDING LIBRARY EXTENSIONS | EMC Corporation |
| 09281846 | 6324065 | STIFFENER FOR A PRINTED CIRCUIT BOARD | EMC Corporation |
| 09282482 | 6323423 | HOUSING FOR INTERCONNECTED PRINTED CIRCUIT BOARDS | EMC Corporation |
| 09282673 | 6285563 | SUPPORT BRACKET FOR A PRINTED CIRCUIT BOARD CONNECTABLE TO DAUGHTER BOARDS | EMC Corporation |
| 09283029 | 6325472 | FASTENING DEVICE FOR A PRINTED CIRCUIT BOARD | EMC Corporation |
| 09289290 | 6163422 | METHOD AND APPARATUS FOR INCREASING DISC DRIVE PERFORMANCE | EMC Corporation |
| 09290844 | 6311257 | METHOD AND APPARATUS FOR ALLOCATING MEMORY FOR A COMMAND QUEUE | EMC Corporation |
| 09295718 | 6931440 | METHOD AND APPARATUS FOR DYNAMICALLY DETERMINING WHETHER ACCESS TO A RESOURCE CONNECTED TO A COMPUTER HAS CHANGED AND DETERMINING HOW TO ACCESS THE RESOURCE WITH A NEW IDENTIFIER | EMC Corporation |
| 09301057 | 6895418 | VERSATILE INDIRECTION IN AN EXTENT BASED FILE SYSTEM | EMC Corporation |
| 09301177 | 6654772 | MULTI-VOLUME EXTENT BASED FILE SYSTEM | EMC Corporation |
| 09303242 | 6370626 | METHOD AND APPARATUS FOR INDEPENDENT AND SIMULTANEOUS ACCESS TO A COMMON DATA SHEET | EMC Corporation |
| 09304775 | 6985583 | SYSTEM AND METHOD FOR AUTHENTICATION SEED DISTRIBUTION | EMC Corporation |
| 09306526 | 6574732 | SOFTWARE FINGERPRINTING AND BRANDING | EMC Corporation |
| 09312146 | 6353869 | ADAPTIVE DELAY OF POLLING FREQUENCIES IN A DISTRIBUTED SYSTEM WITH A QUEUED LOCK | EMC Corporation |
| 09315437 | 6505321 | FAULT TOLERANT PARITY GENERATION | EMC Corporation |
| 09316251 | 6516348 | COLLECTING AND PREDICTING CAPACITY INFORMATION FOR COMPOSITE NETWORK RESOURCE FORMED BY COMBINING PORTS OF AN ACCESS SERVER AND/OR LINKS OF WIDE AREA NETWORK | EMC Corporation |
| 09320423 | 6751735 | APPARATUS FOR CONTROL OF CRYPTOGRAPHY IMPLEMENTATIONS IN THIRD PARTY APPLICATIONS | EMC Corporation |
| | | | |
| 09325207 | 6133544 | LASER WELD DISK CARTRIDGE | EMC Corporation |
| 09336461 | 6526521 | METHODS AND APPARATUS FOR PROVIDING DATA STORAGE ACCESS | EMC Corporation |
| 09337059 | 6201662 | LATENT ILLUMINANCE DISCRIMINATION MARKER WITH REFLECTIVE LAYER FOR DATA STORAGE CARTRIDGES | EMC Corporation |
| 09337361 | 6385762 | DATA REDUCTION USING RANK-OF-RANKS METHODOLOGY | EMC Corporation |
| 09338097 | 6147837 | DATA CARTRIDGE HAVING ARCUATE SHUTTER SPRING | EMC Corporation |

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| 09338098 | 6327105 | APPARATUS AND METHODS FOR LOW OVERHEAD, HIGHLY RELIABLE DETERMINATION OF POSITION OF A MAGNETIC STORAGE MEDIUM | EMC Corporation |
| 09338810 | 6222277 | NON-COLLAPSING INTERCONNECTION FOR SEMICONDUCTOR DEVICES | EMC Corporation |
| 09340261 | 6186890 | ELECTRICAL CABINET DOOR AIR MIXING DAM | EMC Corporation |
| 09342277 | 6220678 | ELECTRICAL CABINET | EMC Corporation |
| 09342453 | 6959368 | METHOD AND APPARATUS FOR DUPLICATING COMPUTER BACKUP DATA | EMC Corporation |
| 09342474 | 6631442 | METHOD AND APPARATUS FOR INTERFACING TO A DATA STORAGE SYSTEM | EMC Corporation |
| 09342608 | 6363385 | METHOD AND APPARATUS FOR MAKING INDEPENDENT DATA COPIES IN A DATA PROCESSING SYSTEM | EMC Corporation |
| 09343000 | 6135875 | ELECTRICAL CABINET | EMC Corporation |
| 09343282 | 6219249 | ELECTRICAL CABINET | EMC Corporation |
| 09343344 | 6629216 | FIBRE CHANNEL BY-PASS | EMC Corporation |
| 09343969 | 6839747 | USER INTERFACE FOR MANAGING STORAGE IN A STORAGE SYSTEM COUPLED TO A NETWORK | EMC Corporation |
| 09344999 | 6662197 | METHOD AND APPARATUS FOR MONITORING UPDATE ACTIVITY IN A DATA STORAGE FACILITY | EMC Corporation |
| 09345038 | 6104048 | ELECTROSTATIC DISCHARGE PROTECTION FOR MAGNETO-RESISTIVE HEADS | EMC Corporation |
| 09345048 | 6581136 | FIBRE CHANNEL DATA STORAGE SYSTEM HAVING EXPANSION/CONTRACTION | EMC Corporation |
| 09345053 | 6636934 | FIBRE CHANNEL PORT BY-PASS SELECTOR SECTION FOR DUAL PORTED DISK DRIVES | EMC Corporation |
| 09345216 | 6845395 | METHOD AND APPARATUS FOR IDENTIFYING NETWORK DEVICES ON A STORAGE NETWORK | EMC Corporation |
| 09345254 | 6665714 | METHOD AND APPARATUS FOR DETERMINING AN IDENTITY OF A NETWORK DEVICE | EMC Corporation |
| 09347592 | 6304946 | SYSTEM AND METHOD FOR OPTIMIZING CACHE WRITE BACKS TO DISKS | EMC Corporation |
| 09352353 | 6249873 | METHOD OF AND APPARATUS FOR PROVIDING SECURE DISTRIBUTED DIRECTORY SERVICES AND PUBLIC KEY INFRASTRUCTURE | EMC Corporation |
| 09352651 | 6567890 | FIBRE CHANNEL PORT BY-PASS SELECTOR SECTION FOR DUAL PORTED DISK DRIVES | EMC Corporation |
| 09356600 | 7111172 | SYSTEM AND METHODS FOR MAINTAINING AND DISTRIBUTING PERSONAL SECURITY DEVICES | EMC Corporation |
| 09359205 | 7461250 | SYSTEM AND METHOD FOR CERTIFICATE EXCHANGE | EMC Corporation |
| 09360337 | 6529992 | SELF-CONTAINED APPLICATION DISK FOR AUTOMATICALLY LAUNCHING APPLICATION SOFTWARE OR STARTING DEVICES AND PERIPHERALS | EMC Corporation |
| 09362270 | 6587959 | SYSTEM AND METHOD FOR ADDRESSING SCHEME FOR USE ON CLUSTERS | EMC Corporation |
| 09362400 | 6324692 | UPGRADE OF A PROGRAM | EMC Corporation |
| 09364727 | 6839782 | COMPUTER STORAGE SYSTEM INCORPORATING ON-BOARD EEPROMS CONTAINING PRODUCT DATA | EMC Corporation |

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| 09364931 | 6467047 | COMPUTER STORAGE SYSTEM CONTROLLER INCORPORATING CONTROL STORE MEMORY WITH PRIMARY AND SECONDARY DATA AND PARITY AREAS | EMC Corporation |
| 09365359 | 6218821 | COMPUTER STORAGE SYSTEM INCORPORATING MARGINABLE POWER SUPPLY AND POWER-UP BYPASS CIRCUIT | EMC Corporation |
| 09365360 | 6560573 | STORAGE CONTROLLER WITH HARDWARE EMULATION CONTROLLER FOR EMULATION BETWEEN CONTROL PROCESSOR AND TRANSFER CIRCUITRY COMPATIBLE TO DIFFERENT PROCESSOR | EMC Corporation |
| 09365375 | 6539492 | SYSTEM AND METHOD FOR MAINTAINING SYNCHRONIZATION IN A COMPUTER STORAGE SYSTEM | EMC Corporation |
| 09369712 | 6430714 | FAILURE DETECTION AND ISOLATION | EMC Corporation |
| 09372354 | 6320712 | APPARATUS AND METHODS FOR LOW OVERHEAD, HIGHLY RELIABLE DETERMINATION OF POSITION OF A MAGNETIC STORAGE MEDIUM | EMC Corporation |
| 09375331 | 6832379 | COMPUTER ARCHITECTURE UTILIZING LAYERED DEVICE DRIVERS | EMC Corporation |
| 09375860 | 6671705 | REMOTE MIRRORING SYSTEM, DEVICE, AND METHOD | EMC Corporation |
| 09376173 | 7013465 | SYSTEM, DEVICE AND METHOD FOR INTERPROCESSOR COMMUNICATION IN A COMPUTER SYSTEM | EMC Corporation |
| 09377581 | 6397292 | ASYMMETRICAL STRIPING OF MIRRORED STORAGE DEVICE ARRAYS AND CONCURRENT ACCESS TO EVEN TRACKS ON THE FIRST ARRAY AND ODD TRACKS IN THE SECOND ARRAY TO IMPROVE DATA ACCESS PERFORMANCE | EMC Corporation |
| 09378643 | 6629199 | DIGITAL DATA STORAGE SYSTEM INCLUDING DIRECTORY FOR EFFICIENTLY PROVIDING FORMATTING INFORMATION FOR STORED RECORDS AND UTILIZATION OF A CHECK VALUE FOR VERIFYING THAT A RECORD IS FROM A PARTICULAR STORAGE LOCATION | EMC Corporation |
| 09378644 | 6330655 | DIGITAL DATA STORAGE SUBSYSTEM INCLUDING DIRECTORY FOR EFFICIENTLY PROVIDING FORMATTING INFORMATION FOR STORED RECORDS | EMC Corporation |
| 09379947 | 6157925 | SYSTEM AND METHOD FOR CACHING IDENTIFICATION AND LOCATION INFORMATION IN A COMPUTER NETWORK | EMC Corporation |
| 09382752 | 6611896 | DYNAMIC MIRROR SERVICE POLICY WITH SEEK ADJUSTMENT IN A NON-PHYSICAL MIRRORED STG ENVIRONMENT | EMC Corporation |
| 09383821 | 6243834 | APPARATUS AND METHOD FOR CAPTURING INFORMATION OFF A PLURALITY OF BI-DIRECTIONAL COMMUNICATION BUSES | EMC Corporation |
| 09388328 | 6493796 | METHOD AND APPARATUS FOR MAINTAINING CONSISTENCY OF DATA STORED IN A GROUP OF MIRRORING DEVICES | EMC Corporation |

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| 09390012 | 6295587 | METHOD AND APPARATUS FOR MULTIPLE DISK DRIVE ACCESS IN A MULTI-PROCESSOR/MULTI-DISK DRIVE SYSTEM | EMC Corporation |
| 09390728 | 6162490 | METHOD FOR APPLYING AN EMISSIVE MATERIAL TO A SUBSTRATE | EMC Corporation |
| 09391360 | 6976165 | SYSTEM AND METHOD FOR SECURE STORAGE, TRANSFER AND RETRIEVAL OF CONTENT ADDRESSABLE INFORMATION | EMC Corporation |
| 09392192 | 6275860 | METHOD AND APPARATUS FOR SYNCHRONIZING FUNCTION VALUES INA MULTIPLE PROTOCOL SYSTEM | EMC Corporation |
| 09396146 | 6480930 | MAILBOX FOR CONTROLLING STORAGE SUBSYSTEM RECONFIGURATIONS | EMC Corporation |
| 09396217 | 6405282 | METHOD FOR ANALYZING DISK SEEK TIMES IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| 09396218 | 6341333 | METHOD FOR TRANSPARENT EXCHANGE OF LOGICAL VOLUMES IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| 09396253 | 6711649 | LOAD BALANCING ON DISK ARRAY STORAGE DEVICE | EMC Corporation |
| 09396275 | 6442650 | MAXIMIZING SEQUENTIAL OUTPUT IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| 09398269 | 6662241 | APPARATUS AND METHOD FOR CONTROLLING A PERIPHERAL DEVICE | EMC Corporation |
| 09404016 | 6499039 | REORGANIZATION OF STRIPED DATA DURING FILE SYSTEM EXPANSION IN A DATA STORAGE SYSTEM | EMC Corporation |
| 09408058 | 6581137 | DATA STORAGE SYSTEM | EMC Corporation |
| 09408234 | 6519739 | FAULT DETECTOR | EMC Corporation |
| 09408429 | 6915394 | MICROPROCESSOR INTERFACE | EMC Corporation |
| 09408430 | 6735655 | INTERRUPT REQUEST CONTROLLER | EMC Corporation |
| 09408807 | 6836818 | CENTRAL PROCESSING UNIT | EMC Corporation |
| 09408811 | 6543029 | ERROR CORRECTOR | EMC Corporation |
| 09410385 | 6144527 | A METHOD FOR ACCESSING A MEDIUM WITHIN A SHUTTER SHELL THAT ENCAPSULATES THE MEDIUM | EMC Corporation |
| 09410514 | 6389420 | FILE MANAGER PROVIDING DISTRIBUTED LOCKING AND METADATA MANAGEMENT FOR SHARED DATA ACCESS BY CLIENTS RELINQUISHING LOCKS AFTER TIME PERIOD EXPIRATION | EMC Corporation |
| 09411612 | 6505216 | METHODS AND APPARATUS FOR BACKING-UP AND RESTORING FILES USING MULTIPLE TRAILS | EMC Corporation |
| 09415144 | 6550029 | TESTING SYSTEM AND METHODS WITH PROTOCOL PATTERN INJECTION AND EXTERNAL VERIFICATION | EMC Corporation |
| 09424180 | 6816337 | MAGNETIC RECORDING UNIT | EMC Corporation |
| 09427451 | 6557113 | SYNCHRONIZATION RECOVERY TECHNIQUE FOR STORAGE MEDIA | EMC Corporation |
| 09431758 | 6944654 | MULTIPLE STORAGE ARRAY CONTROL | EMC Corporation |
| 09434611 | 6457102 | CACHE USING MULTIPLE LRU'S | EMC Corporation |
| 09438137 | 6714952 | METHOD FOR BACKUP AND RESTORE OF MULTI-LINGUAL NETWORK FILE SERVER | EMC Corporation |

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| 09438245 | 6483041 | MICRO SOLDERED CONNECTION | EMC Corporation |
| 09438913 | 6754897 | OPERATION PRIORITIZATION AND SELECTION IN PROBABILITY-BASED JOB SCHEDULER | EMC Corporation |
| 09439903 | 6665740 | LOGICAL VOLUME SELECTION IN A PROBABILITY-BASED JOB SCHEDULER | EMC Corporation |
| 09440756 | 6625750 | HARDWARE AND SOFTWARE FAILOVER SERVICES FOR A FILE SERVER | EMC Corporation |
| 09442884 | 6415372 | ROLLING BACK STORAGE SUBSYSTEM RECONFIGURATIONS | EMC Corporation |
| 09444949 | 6590731 | SYSTEM AND METHOD FOR ADAPTIVE SOFT HEAD LOADING OF DISK DRIVE HEAD ONTO DISK MEDIUM | EMC Corporation |
| 09452605 | 6557058 | METHOD AND APPARATUS OF SUSTAINED SEQUENTIAL DATA TRANSFER IN A MEDIA DRIVE | EMC Corporation |
| 09452964 | 6434681 | SNAPSHOT COPY FACILITY FOR A DATA STORAGE SYSTEM PERMITTING CONTINUED HOST READ/WRITE ACCESS | EMC Corporation |
| 09453241 | 6549992 | COMPUTER DATA STORAGE BACKUP WITH TAPE OVERFLOW CONTROL OF DISK CACHING OF BACKUP DATA STREAM | EMC Corporation |
| 09453990 | 6466944 | METHOD FOR CREATION, MANAGEMENT, AND USE OF FILES CONTAINING MULTIPLE VIRTUAL DATA STREAMS USING STANDARD FILE SYSTEM APIS | EMC Corporation |
| 09455072 | 6338126 | CRASH RECOVERY WITHOUT COMPLETE REMIRROR | EMC Corporation |
| 09466286 | 6134062 | METHOD AND APPARATUS FOR INCREASING DISC DRIVE PERFORMANCE | EMC Corporation |
| 09466976 | 6490598 | SYSTEM AND METHOD FOR EXTERNAL BACKUP AND RESTORE FOR A COMPUTER DATA STORAGE SYSTEM | EMC Corporation |
| 09467354 | 6487562 | DYNAMICALLY MODIFYING SYSTEM PARAMETERS IN A DATA STORAGE SYSTEM | EMC Corporation |
| 09467355 | 6651074 | METHOD AND APPARATUS FOR STORAGE AND RETRIEVAL OF VERY LARGE DATABASES USING A DIRECT PIPE | EMC Corporation |
| 09467358 | 6658589 | SYSTEM AND METHOD FOR BACKUP A PARALLEL SERVER DATA STORAGE SYSTEM | EMC Corporation |
| 09468270 | 6557079 | REMOTE DATA FACILITY PREFETCH | EMC Corporation |
| 09470645 | 7146614 | COMPUTER DIRECTORY SYSTEM HAVING AN APPLICATION INTEGRATION DRIVER INFRASTRUCTURE | EMC Corporation |
| 09471848 | 6401178 | DATA PROCESSING METHOD AND APPARATUS FOR ENABLING INDEPENDENT ACCESS TO REPLICATED DATA | EMC Corporation |
| 09471869 | 7054892 | METHOD AND APPARATUS FOR MANAGING INFORMATION RELATED TO STORAGE ACTIVITIES OF DATA STORAGE SYSTEMS | EMC Corporation |
| 09472583 | 6529521 | DATA STORAGE SYSTEM | EMC Corporation |
| 09473668 | 6574687 | FIBRE CHANNEL DATA STORAGE SYSTEM | EMC Corporation |
| 09474112 | 6571355 | FIBRE CHANNEL DATA STORAGE SYSTEM FAIL-OVER MECHANISM | EMC Corporation |
| 09474284 | 6516370 | DATA STORAGE SYSTEM | EMC Corporation |

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| 09474384 | 6615315 | FIBRE CHANNEL DATA STORAGE SYSTEM HAVING IMPROVED FRONT-END I/O ADAPTED HUB | EMC Corporation |
| 09474385 | 6283429 | MOUNTING ASSEMBLY | EMC Corporation |
| 09474476 | 6766359 | METHOD AND APPARATUS FOR UTILIZING MULTIPLE PATHS IN A FILE TRANSFER UTILITY EMPLOYING AN INTERMEDIATE DATA STORAGE SYSTEM | EMC Corporation |
| 09474500 | 6560683 | FIBRE CHANNEL DATA STORAGE SYSTEM HAVING IMPROVED REAR-END I/O ADAPTED HUB | EMC Corporation |
| 09474607 | 6983330 | METHOD AND APPARATUS FOR USING MULTIPLE PATHS FOR PROCESSING OUT OF BAND COMMANDS | EMC Corporation |
| 09474633 | 6496951 | METHOD FOR TESTING SIGNAL INTEGRITY IN A DATA STORAGE SYSTEM | EMC Corporation |
| 09474886 | 6466718 | METHOD AND APPARATUS FOR TRANSMITTING FIBRE-CHANNEL AND NON-FIBRE CHANNEL SIGNALS THROUGH A COMMON CABLE | EMC Corporation |
| 09475462 | 6587957 | DISK DRIVE CONTROLLER FOR CONTROLLING DATA FLOW THERETHROUGH BY SWITCHING TO SECONDARY BUS TO RECEIVE CLOCK PULSES WHEN A FAILURE ON MASTER BUS IS DETECTED | EMC Corporation |
| 09479488 | 6574753 | PEER LINK FAULT ISOLATION | EMC Corporation |
| 09479512 | 6718372 | METHODS AND APPARATUS FOR PROVIDING ACCESS BY A FIRST COMPUTING SYSTEM TO DATA STORED IN A SHARED STORAGE DEVICE MANAGED BY A SECOND COMPUTING SYSTEM | EMC Corporation |
| 09479778 | 6317845 | SYSTEM FOR COMPUTER RECOVERY USING REMOVABLE HIGH CAPACITY MEDIA (ZIP SNIPER/RESCUE) | EMC Corporation |
| 09480390 | 6829609 | SYSTEM, DEVICE, AND METHOD FOR PROVIDING MUTUAL EXCLUSION FOR COMPUTER SYSTEM RESOURCES | EMC Corporation |
| 09483405 | 6654784 | COMPUTING ARCHITECTURE | EMC Corporation |
| 09489526 | 6260109 | METHOD & APPARATUS FOR PROVIDING LOGICAL DEVICES SPANNING SEVERAL PHYSICAL VOLUMES | EMC Corporation |
| 09496308 | 6711574 | RETRIEVAL OF MANAGEMENT INFORMATION | EMC Corporation |
| 09496824 | 7197639 | CRYPTOGRAPHIC COUNTERMEASURES AGAINST CONNECTION DEPLETION ATTACKS | EMC Corporation |
| 09498287 | 6742059 | PRIMARY AND SECONDARY MANAGEMENT COMMANDS FOR A PERIPHERAL CONNECTED TO MULTIPLE AGENTS | EMC Corporation |
| 09506637 | 6587297 | SYSTEM AND METHOD FOR DETECTING THE PRESENCE OF A DATA-STORAGE CARTRIDGE USING PHASE-ROTATED POLARIZED LIGHT | EMC Corporation |
| 09515773 | 6748581 | APPARATUS AND METHOD FOR IMPLEMENTING AN EXISTING OBJECT-ORIENTED CLASS IN AN OBJECT MANAGEMENT SYSTEM | EMC Corporation |
| 09516271 | 6567873 | SPINLOCK WITH ADAPTIVE DELAY | EMC Corporation |
| 09517063 | 6665703 | STORAGE SYSTEM WITH INTERNAL LAN | EMC Corporation |
| 09521681 | 6813354 | MIXING IN SMALL BATCHES | EMC Corporation |

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| 09521902 | 6810396 | MANAGED ACCESS OF A BACKUP STORAGE SYSTEM COUPLED TO A NETWORK | EMC Corporation |
| 09521930 | 6629189 | METHOD AND APPARATUS FOR MANAGING TARGET DEVICES IN A MULTI-PATH COMPUTER SYSTEM | EMC Corporation |
| 09524147 | 6459545 | USE OF MATTE MATERIALS TO REDUCE SIGNAL POLLUTION IN CARTRIDGE DETECTION CIRCUITRY | EMC Corporation |
| 09524337 | 6772339 | MIX AND MATCH: A NEW APPROACH TO SECURE MULTIPARTY COMPUTATION | EMC Corporation |
| 09525648 | 6571367 | METHOD AND APPARATUS CONNECTING BETWEEN A FIBER CHANNEL AND A CACHE MEMORY | EMC Corporation |
| 09527156 | 6466406 | DATA STORAGE CARTRIDGE HAVING ONE OR MORE SURFACE RECESSES FOR IMPROVED INTERNAL AIR CIRCULATION | EMC Corporation |
| 09528011 | 6398324 | SYSTEM AND METHOD FOR RECONSTRUCTING DATA ASSOCIATED WITH PROTECTED STORAGE VOLUME STORED IN MULTIPLE MODULES OF BACK-UP MASS DATA STORAGE FACILITY | EMC Corporation |
| 09533009 | 6553471 | CONTROLLING ACCESS TO A STORAGE DEVICE BY CONTROLLING PORTS THERETO | EMC Corporation |
| 09533025 | 6898727 | METHOD AND APPARATUS FOR PROVIDING HOST RESOURCES FOR AN ELECTRONIC COMMERCE SITE | EMC Corporation |
| 09533154 | 6365904 | SYSTEM AND METHOD OF HEAT SIGNATURE VERIFICATION/AUTHENTICATION OF AN OBJECT | EMC Corporation |
| 09533395 | 6587970 | METHOD AND APPARATUS FOR PERFORMING SITE FAILOVER | EMC Corporation |
| 09533409 | 7281031 | METHOD AND APPARATUS FOR PROVIDING ADDITIONAL RESOURCES FOR A HOST COMPUTER | EMC Corporation |
| 09535134 | 6728836 | SEGMENTING CACHE TO PROVIDE VARYING SERVICE LEVELS | EMC Corporation |
| 09536194 | 6347734 | METHODS AND APPARATUS FOR INSTALLING A MODULE ON A CIRCUIT BOARD USING HEATING AND COOLING TECHNIQUES | EMC Corporation |
| 09536195 | 6398935 | METHOD FOR MANUFACTURING PCB'S | EMC Corporation |
| 09539747 | 6792047 | REAL TIME PROCESSING AND STREAMING OF SPLICED ENCODED MPEG VIDEO AND ASSOCIATED AUDIO | EMC Corporation |
| 09539966 | 7003601 | DATA STORAGE SYSTEM HAVING SEPARATE DATA TRANSFER SECTION AND MESSAGE NETWORK WITH PLURAL DIRECTORS ON A COMMON PRINTED CIRCUIT BOARD | EMC Corporation |
| 09539967 | 6557074 | QUALITY OF SWAPS OF DATA STORAGE VOLUMES | EMC Corporation |
| 09539968 | 6851019 | SWAPPING DATA STORAGE VOLUMES | EMC Corporation |
| 09540306 | 7096481 | PREPARATION OF METADATA FOR SPLICING OF ENCODED MPEG VIDEO AND AUDIO | EMC Corporation |
| 09540347 | 6678332 | SEAMLESS SPLICING OF ENCODED MPEG VIDEO AND AUDIO | EMC Corporation |
| 09540671 | 6614616 | DETERMINING SEEK TIMES | EMC Corporation |
| 09540675 | 6581112 | DIRECT MEMORY ACCESS (DMA) RECEIVER | EMC Corporation |

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| 09540825 | 6993621 | DATA STORAGE SYSTEM HAVING SEPARATE DATA TRANSFER SECTION AND MESSAGE NETWORK WITH PLURAL DIRECTORS ON A COMMON PRINTED CIRCUIT BOARD AND REDUNDANT SWITCHING NETWORKS | EMC Corporation |
| 09540826 | 6665771 | INTRA-DISK SWAPPING OF DATA STORAGE VOLUMES | EMC Corporation |
| 09540827 | 6584513 | DIRECT MEMORY ACCESS (DMA) TRANSMITTER | EMC Corporation |
| 09540828 | 7117275 | DATA STORAGE SYSTEM HAVING SEPARATE DATA TRANSFER SECTION AND MESSAGE NETWORK | EMC Corporation |
| 09541158 | 6633954 | A METHOD FOR ENHANCING HOST APPLICATION PERFORMANCE WITH A DASD USING TASK PRIORITIES | EMC Corporation |
| 09541159 | 6917569 | METHOD FOR DETERMINING SEEK TIMES IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| 09542171 | 6775720 | METHOD AND SYSTEM FOR CONFIGURING A MASS STORAGE SYSTEM FOR MEASURING SYSTEM PERFORMANCE | EMC Corporation |
| 09542463 | 6647458 | BENCHMARK TOOL WRITE ANALYSIS FOR A MASS STORAGE SYSTEM | EMC Corporation |
| 09547510 | 6636250 | METHOD AND APPARATUS FOR PRESENTING INFORMATION TO A USER OF A COMPUTER SYSTEM | EMC Corporation |
| 09547533 | 6691165 | DISTRIBUTED SERVER CLUSTER FOR CONTROLLING NETWORK TRAFFIC | EMC Corporation |
| 09548188 | 7299294 | DISTRIBUTED TRAFFIC CONTROLLER FOR NETWORK DATA | EMC Corporation |
| 09550825 | 6424502 | ROLL-STABILIZED HEAD LIFTING APPARATUS AND METHOD FOR A DATA STORAGE DEVICE | EMC Corporation |
| 09551720 | 6356441 | DISK DRIVE ASSEMBLY WITH IMPROVED SECURING AND RELEASING MECHANISM | EMC Corporation |
| 09552878 | 7016951 | SYSTEM AND METHOD FOR NETWORK SECURITY | EMC Corporation |
| 09556534 | 6424492 | FREQUENCY BASED CARTRIDGE DETECTION SCHEME | EMC Corporation |
| 09558638 | 6535005 | SYSTEMS AND METHODS FOR OBTAINING AN ELECTRICAL CHARACTERISTIC OF A CIRCUIT BOARD ASSEMBLY PROCESS | EMC Corporation |
| 09561161 | 6611879 | DATA STORAGE SYSTEM HAVING SEPARATE DATA TRANSFER SECTION AND MESSAGE NETWORK WITH TRACE BUFFER | EMC Corporation |
| 09561531 | 6779071 | DATA STORAGE SYSTEM HAVING SEPARATE DATA TRANSFER SECTION AND MESSAGE NETWORK WITH STATUS REGISTER | EMC Corporation |
| 09561532 | 6651130 | DATA STORAGE SYSTEM HAVING SEPARATE DATA TRANSFER SECTION AND MESSAGE NETWORK WITH BUS ARBITRATION | EMC Corporation |
| 09564103 | 6432346 | PROCESS OF MAKING MAGNETIC RECORDING DISK | EMC Corporation |
| 09566592 | 6801949 | DISTRIBUTED SERVER CLUSTER WITH GRAPHICAL USER INTERFACE | EMC Corporation |
| 09568386 | 6754718 | PUSHING ATTRIBUTE INFORMATION TO STORAGE DEVICES FOR NETWORK TOPOLOGY ACCESS | EMC Corporation |

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|---|---|---|---|
| 09578121 | 6260110 | VIRTUAL TAPE SYSTEM WITH VARIABLE SIZE | EMC Corporation |
| 09579427 | 6691209 | TOPOLOGICAL DATA CATEGORIZATION AND FORMATTING FOR A MASS STORAGE SYSTEM | EMC Corporation |
| 09579670 | 7219260 | FAULT TOLERANT SYSTEM SHARED SYSTEM RESOURCE WITH STATE MACHINE LOGGING | EMC Corporation |
| 09579671 | 6678788 | DATA TYPE AND TOPOLOGICAL DATA CATEGORIZATION AND ORDERING FOR A MASS STORAGE SYSTEM | EMC Corporation |
| 09580186 | 6594775 | FAULT HANDLING MONITOR TRANSPARENTLY USING MULTIPLE TECHNOLOGIES FOR FAULT HANDLING IN A MULTIPLE HIERARCHAL/PEER DOMAIN FILE SERVER WITH DOMAIN CENTERED, CROSS DOMAIN COOPERATIVE FAULT HANDLING MECHANISMS | EMC Corporation |
| 09580187 | 6718481 | MULTIPLE HIERARCHAL/PEER DOMAIN FILE SERVER WITH DOMAIN BASED, CROSS DOMAIN COOPERATIVE FAULT HANDLING MECHANISMS | EMC Corporation |
| 09580539 | 6578160 | FAULT TOLERANT, LOW LATENCY SYSTEM RESOURCE WITH HIGH LEVEL LOGGING OF SYSTEM RESOURCE TRANSACTIONS AND CROSS-SERVER MIRRORED HIGH LEVEL LOGGING OF SYSTEM RESOURCE TRANSACTIONS | EMC Corporation |
| 09587783 | 7043715 | METHOD AND APPARATUS FOR CUSTOMIZING SOFTWARE | EMC Corporation |
| 09589247 | 6724554 | READ/WRITE PROTECT SCHEME FOR A DISK CARTRIDGE AND DRIVE | EMC Corporation |
| 09590508 | 6633445 | METHOD AND APPARATUS FOR ELECTRICALLY COUPLING COMPONENTS IN A REMOVABLE CARTRIDGE | EMC Corporation |
| 09590509 | 6628474 | METHOD AND APPARATUS FOR ELECTROSTATIC DISCHARGE PROTECTION IN A REMOVABLE CARTRIDGE | EMC Corporation |
| 09590511 | 6717762 | METHOD AND APPARATUS FOR MAKING A DRIVE COMPATIBLE WITH A REMOVABLE CARTRIDGE | EMC Corporation |
| 09590747 | 6360276 | METHODS AND APPARATUS FOR DETERMINING, VERIFYING, AND REDISCOVERING NETWORK IP ADDRESSES | EMC Corporation |
| 09591540 | 6624979 | METHOD AND APPARATUS FOR PARKING AND RELEASING A MAGNETIC HEAD | EMC Corporation |
| 09591827 | 6697367 | MULTIHOP SYSTEM CALLS | EMC Corporation |
| | | | |
| 09596295 | 6658522 | METHOD TO REDUCE OVERHEAD ASSOCIATED WITH SYSTEM I/0 IN A MULTIPROCESSOR COMPUTER SYSTEM | EMC Corporation |
| 09599229 | 7953834 | SYSTEM AND METHOD FOR REDUCING BANDWIDTH CONSUMED BY LOOPING MESSAGE PACKETS IN LOCAL AREA NETWORK | EMC Corporation |
| 09604592 | 6484173 | CONTROLLING ACCESS TO A STORAGE DEVICE | EMC Corporation |
| 09604853 | 6813686 | METHOD AND APPARATUS FOR IDENTIFYING LOGICAL VOLUMES IN MULTIPLE ELEMENT COMPUTER STORAGE DOMAINS | EMC Corporation |

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| 09605040 | 6842784 | USE OF GLOBAL LOGICAL VOLUME IDENTIFIERS TO ACCESS LOGICAL VOLUMES STORED AMONG A PLURALITY OF STORAGE ELEMENTS IN A COMPUTER STORAGE SYSTEM | EMC Corporation |
| 09605043 | 6760828 | METHOD AND APPARATUS FOR USING LOGICAL VOLUME IDENTIFIERS FOR TRACKING OR IDENTIFYING LOGICAL VOLUME STORED IN THE STORAGE SYSTEM | EMC Corporation |
| 09605044 | 7065610 | METHOD AND APPARATUS FOR MAINTAINING INVENTORY OF LOGICAL VOLUMES STORED ON STORAGE ELEMENTS | EMC Corporation |
| 09605172 | 6728962 | CONTEXT SWAPPING IN MULTITASKING KERNEL | EMC Corporation |
| 09605201 | 6978324 | METHOD AND APPARATUS FOR MOVING LOGICAL ENTITIES AMONG STORAGE ELEMENTS IN A COMPUTER STORAGE SYSTEM | EMC Corporation |
| 09605378 | 6708265 | METHOD AND APPARATUS FOR MOVING ACCESSES TO LOGICAL ENTITIES FROM ONE STORAGE ELEMENT TO ANOTHER STORAGE ELEMENT IN A COMPUTER STORAGE SYSTEM | EMC Corporation |
| 09605553 | 7225191 | METHOD AND APPARATUS FOR VERIFYING STORAGE ACCESS REQUESTS IN A COMPUTER STORAGE SYSTEM WITH MULTIPLE STORAGE ELEMENTS | EMC Corporation |
| 09605554 | 6912548 | LOGICAL VOLUME IDENTIFIER DATABASE FOR LOGICAL VOLUMES IN A COMPUTER STORAGE SYSTEM | EMC Corporation |
| 09605626 | 6687903 | INHIBITING STARVATION IN A MULTITASKING OPERATING SYSTEM | EMC Corporation |
| 09605812 | 7296271 | REPLACEABLE SCHEDULING ALGORITHM IN A MULTITASKING KERNEL | EMC Corporation |
| 09606496 | 6742017 | DATA STORAGE SYSTEM HAVING SEPARATE DATA TRANSFER SECTION AND MESSAGE NETWORK WITH POINTER OR COUNTERS | EMC Corporation |
| 09606505 | 6816916 | DATA STORAGE SYSTEM HAVING MULTI-CAST/UNICAST | EMC Corporation |
| 09606730 | 7007194 | DATA STORAGE SYSTEM HAVING POINT-TO-POINT CONFIGURATION | EMC Corporation |
| 09606734 | 7073020 | METHOD FOR MESSAGE TRANSFER IN COMPUTER STORAGE SYSTEM | EMC Corporation |
| 09608050 | 6771703 | EFFICIENT SCALING OF NONSCALABLE MPEG-2 VIDEO | EMC Corporation |
| 09608469 | 6938039 | CONCURRENT FILE ACCESS AT A TARGET FILE SERVER DURING MIGRATION OF FILE SYSTEMS BETWEEN FILE SERVERS USING A NETWORK FILE SYSTEM ACCESS PROTOCOL | EMC Corporation |
| 09608521 | 8281022 | METHOD AND APPARATUS FOR IMPLEMENTING HIGH-PERFORMANCE, SCALEABLE DATA PROCESSING AND STORAGE SYSTEMS | EMC Corporation |
| 09608919 | 6871006 | PROCESSING OF MPEG ENCODED VIDEO FOR TRICK MODE OPERATION | EMC Corporation |
| 09609966 | 6385551 | METHODS AND APPARATUS FOR OBTAINING A CONNECTION CHARACTERISTIC OF A CONNECTION ASSEMBLY | EMC Corporation |

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| 09609967 | 6681353 | METHODS AND APPARATUS FOR OBTAINING A TRACE OF A DIGITAL SIGNAL WITHIN A FIELD PROGRAMMABLE GATE ARRAY DEVICE | EMC Corporation |
| 09610405 | 6535994 | METHOD AND APPARATUS FOR IDENTIFYING AND REPAIRING MISMATCHED DATA | EMC Corporation |
| 09611913 | 7185192 | METHOD AND APPARATUS FOR CONTROLLING ACCESS TO A RESOURCE | EMC Corporation |
| 09613118 | 6754682 | METHOD AND APPARATUS FOR ENABLING CONSISTENT ANCILLARY DISK ARRAY STORAGE DEVICE OPERATIONS WITH RESPECT TO A MAIN APPLICATION | EMC Corporation |
| 09614820 | 6584544 | METHOD AND APPARATUS FOR PREPARING A DISK FOR USE IN A DISK ARRAY | EMC Corporation |
| 09614859 | 6578164 | METHOD FOR DETECTING TRANSIENT WRITE ERRORS IN A DISK DRIVE HAVING A DUAL TRANSDUCER SLIDER | EMC Corporation |
| 09618488 | 6480380 | METHODS AND APPARATUS FOR COOLING A DISK DRIVE | EMC Corporation |
| 09620013 | 6658592 | ERROR DETECTION IN A DISK STORAGE SYSTEM | EMC Corporation |
| 09620176 | 7502922 | COMPUTER NETWORK HAVING A SECURITY LAYER INTERFACE INDEPENDENT OF THE APPLICATION TRANSPORT MECHANISM | EMC Corporation |
| 09620491 | 6328590 | METHODS AND APPARATUS FOR CONTROLLING ATTACHMENT OF AN ELECTRONIC MODULE WITH A CIRCUIT BOARD CONNECTOR | EMC Corporation |
| 09628967 | 6487071 | METHODS AND APPARATUS FOR DAMPENING VIBRATION OF A DISK DRIVE | EMC Corporation |
| 09628968 | 6515854 | DISK DRIVE ASSEMBLY WITH PRESS FIT LEVER | EMC Corporation |
| 09629652 | 6523036 | INTERNET DATABASE SYSTEM | EMC Corporation |
| 09630711 | 7356696 | PROOFS OF WORK AND BREAD PUDDING PROTOCOLS | EMC Corporation |
| 09634967 | 6389511 | ON-LINE DATA VERIFICATION AND REPAIR IN REDUNDANT STORAGE SYSTEMS | EMC Corporation |
| 09636293 | 6898650 | QUEUEING METHOD SUPPORTING MULTIPLE CLIENT ACCESSES SIMULTANEOUSLY | EMC Corporation |
| 09636360 | 6386435 | SYSTEMS AND METHODS FOR DISTRIBUTING SOLDER PASTE USING A TOOL HAVING A SOLDER PASTE APPERTURE WITH A NON-CIRCULAR CROSS-SECTIONAL SHAPE | EMC Corporation |
| 09637615 | 6701451 | SELECTIVE CORRECTION OF DATA ERRORS | EMC Corporation |
| 09641224 | 7082441 | METHOD FOR STORAGE AND MANIPULATION OF STORAGE SYSTEM METRICS | EMC Corporation |
| 09641227 | 6886020 | METHOD AND APPARATUS FOR MANAGING AND ARCHIVING PERFORMANCE INFORMATION RELATING TO STORAGE SYSTEM | EMC Corporation |
| 09641773 | 6865514 | POST TEST DATA PROCESSING OF A MASS STORAGE SYSTEM | EMC Corporation |
| 09642267 | 7171338 | OUTPUT PERFORMANCE TRENDS OF A MASS STORAGE SYSTEM | EMC Corporation |
| 09642268 | 6845344 | GRAPHICAL USER INPUT INTERFACE FOR TESTING PERFORMANCE OF A MASS STORAGE SYSTEM | EMC Corporation |
| 09644472 | 6278566 | METHOD AND APPARATUS FOR INCREASING DISC DRIVE PERFORMANCE | EMC Corporation |

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| 09654440 | 6519610 | DISTRIBUTED REFERENCE LINKS FOR A DISTRIBUTED DIRECTORY SERVER SYSTEM | EMC Corporation |
| 09658764 | 6552277 | TECHNIQUES FOR FORMING A CONNECTION BETWEEN A PIN AND A CIRCUIT BOARD | EMC Corporation |
| 09661103 | 7051101 | METHODS AND APPARATUS FOR CONTROLLING DEVICES WITHIN STORAGE NETWORKS | EMC Corporation |
| 09662306 | 6356057 | METHODS AND APPARATUS FOR TESTING A POWERABILITY CHARACTERISTIC OF A BACKUP POWER SUPPLY | EMC Corporation |
| 09663540 | 6622221 | WORKLOAD ANALYZER AND OPTIMIZER INTEGRATION | EMC Corporation |
| 09665039 | 6583959 | READ WRITE HEAD ASSEMBLY HAVING AIR BEARING FEATURES FOR CONTAMINANT CONTROL IN FLEXIBLE MEDIA HEAD-DISK INTERFACE | EMC Corporation |
| 09669347 | 6571259 | PREALLOCATION OF FILE SYSTEM CACHE BLOCKS IN A DATA STORAGE SYSTEM | EMC Corporation |
| 09669939 | 6823336 | DATA STORAGE SYSTEM AND METHOD FOR UNINTERRUPTED READ-ONLY ACCESS TO A CONSISTENT DATASET BY ONE HOST PROCESSOR CONCURRENT WITH READ-WRITE ACCESS BY ANOTHER HOST PROCESSOR | EMC Corporation |
| 09670137 | 6535891 | METHOD AND APPARATUS FOR IDENTIFYING ACCESSES TO A REPOSITORY OF LOGICAL OBJECTS STORED ON A STORAGE SYSTEM BASED UPON INFORMATION IDENTIFYING ACCESSES TO PHYSICAL STORAGE LOCATIONS | EMC Corporation |
| 09670429 | 6618649 | METHODS AND APPARATUS FOR CHARACTERIZING A CIRCUIT BREAKER DEVICE | EMC Corporation |
| 09670454 | 6816891 | NETWORK FILE SERVER SHARING LOCAL CACHES OF FILE ACCESS INFORMATION IN DATA PROCESSORS ASSIGNED TO RESPECTIVE FILE SYSTEMS | EMC Corporation |
| 09670707 | 6684268 | DATA STORAGE SYSTEM HAVING SEPARATE DATA TRANSFER SECTION AND MESSAGE NETWORK HAVING CPU BUS SELECTOR | EMC Corporation |
| 09670709 | 6631433 | BUS ARBITER FOR A DATA STORAGE SYSTEM | EMC Corporation |
| 09670783 | 7680819 | MANAGING DIGITAL IDENTITY INFORMATION | EMC Corporation |
| 09670933 | 6801960 | SWITCH-BASED ACCELERATION OF COMPUTER DATA STORAGE EMPLOYING AGGREGATIONS OF DISK ARRAYS | EMC Corporation |
| 09671038 | 6901468 | DATA STORAGE SYSTEM HAVING SEPARATE DATA TRANSFER SECTION AND MESSAGE NETWORK HAVING BUS ARBITRATION | EMC Corporation |
| 09672421 | 6928466 | METHOD AND SYSTEM FOR IDENTIFYING MEMORY COMPONENT IDENTIFIERS ASSOCIATED WITH DATA | EMC Corporation |
| 09672739 | 6769115 | ADAPTIVE INTERFACE FOR A SOFTWARE DEVELOPMENT ENVIRONMENT | EMC Corporation |
| 09675396 | 7065763 | METHOD OF REDUCING CONTENTION OF A HIGHLY CONTENTED LOCK PROTECTING MULTIPLE DATA ITEMS | EMC Corporation |

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| 09675420 | 6611852 | SYSTEM AND METHOD FOR CLEANING A LOG STRUCTURE | EMC Corporation |
| 09675423 | 6865650 | SYSTEM AND METHOD FOR HIERARCHICAL DATA STORAGE | EMC Corporation |
| 09675485 | 6625591 | VERY EFFICIENT IN-MEMORY REPRESENTATION OF LARGE FILE SYSTEM DIRECTORIES | EMC Corporation |
| 09676222 | 6507890 | SYSTEM AND METHOD FOR EXPANDING A LOG STRUCTURE IN A DISK ARRAY | EMC Corporation |
| 09676449 | 6604171 | MANAGING A CACHE MEMORY | EMC Corporation |
| 09676686 | 6591335 | FAULT TOLERANT DUAL CACHE SYSTEM | EMC Corporation |
| 09676709 | 6546457 | METHOD AND APPARATUS FOR RECONFIGURING STRIPED LOGICAL DEVICES IN A DISK ARRAY STORAGE | EMC Corporation |
| 09676732 | 6789206 | COMPUTER ELEMENT | EMC Corporation |
| 09677120 | 6915516 | APPARATUS AND METHOD FOR PROCESS DISPATCHING BETWEEN INDIVIDUAL PROCESSORS OF A MULTI-PROCESSOR SYSTEM | EMC Corporation |
| 09679456 | 7167867 | SELF-DESCRIBING FILE SYSTEM | EMC Corporation |
| 09680156 | 7010575 | DATA STORAGE SYSTEM HAVING SEPARATE DATA TRANSFER SECTION AND MESSAGE NETWORK HAVING BUS ARBITRATION | EMC Corporation |
| 09680157 | 6609164 | DATA STORAGE SYSTEM HAVING SEPARATE DATA TRANSFER SECTION AND MESSAGE NETWORK WITH DATA PIPE DMA | EMC Corporation |
| 09688593 | 6282041 | METHOD AND APPARATUS FOR INCREASING DISC DRIVE PERFORMANCE | EMC Corporation |
| 09691490 | 6912686 | APPARATUS AND METHODS FOR DETECTING ERRORS IN DATA | EMC Corporation |
| 09692974 | 6728840 | METHODS AND APPARATUS FOR PROVIDING HOST-CONTROLLED CACHING OF DATA IN A STORAGE SYSTEM | EMC Corporation |
| 09694071 | 7475199 | SCALABLE NETWORK FILE SYSTEM | EMC Corporation |
| 09697454 | 6516390 | METHODS AND APPARATUS FOR ACCESSING DATA WITHIN A DATA STORAGE SYSTEM | EMC Corporation |
| 09697765 | 6640285 | METHOD AND APPARATUS FOR IMPROVING THE EFFICIENCY OF CACHE MEMORIES USING STORED ACTIVITY MEASURES | EMC Corporation |
| 09702187 | 6442706 | RESOURCE ALLOCATION THROTTLE FOR REMOTE DATA MIRRORING SYSTEM | EMC Corporation |
| 09705991 | 6529998 | ADAPTIVE PREFETCHING OF DATA FROM A DISK | EMC Corporation |
| 09709077 | 6664964 | CORRELATION CRITERIA FOR LOGICAL VOLUMES | EMC Corporation |
| 09715643 | 7216366 | STORAGE BASED APPARATUS FOR ANTI-VIRUS | EMC Corporation |
| 09715681 | 7861302 | PHYSICAL SCANNING OF STORAGE BASED APPARATUS FOR ANTIVIRUS | EMC Corporation |
| 09723606 | 6609178 | SELECTIVE VALIDATION FOR QUEUED MULTIMODAL LOCKING SERVICES | EMC Corporation |
| 09724014 | 6757769 | COOPERATIVE LOCK OVERRIDE PROCEDURE | EMC Corporation |
| 09724043 | 6718448 | QUEUED LOCKING OF A SHARED RESOURCE USING MULTIMODAL LOCK TYPES | EMC Corporation |
| 09724044 | 6691194 | SELECTIVE ASSOCIATION OF LOCK OVERRIDE PROCEDURES WITH QUEUED MULTIMODAL LOCK | EMC Corporation |
| 09725407 | 6487635 | MANAGEMENT OF ORPHAN TRACKS | EMC Corporation |

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| 09726498 | 6772285 | SYSTEM AND METHOD FOR IDENTIFYING BUSY DISK STORAGE UNITS | EMC Corporation |
| 09731244 | 6633925 | OPERATING SYSTEM FOR GENERATING OVERLAPPED INPUT-OUTPUT REQUESTS TO A DEVICE IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| 09731245 | 6665739 | DATA PROCESSING SYSTEM WITH PARALLEL ACCESS TO A LOGICAL VOLUME ON A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| 09731513 | 6665738 | DISK ARRAY STORAGE DEVICE CAPABLE OF HANDLING OVERLAPPED INPUT-OUTPUT REQUESTS | EMC Corporation |
| 09731930 | 6678748 | METHOD FOR OPTIMIZING MULTIPLE INPUT/OUTPUT REQUESTS TO A SINGLE LOGICAL DEVICE | EMC Corporation |
| | | | |
| 09740281 | 6687718 | METHOD AND APPARATUS FOR CASCADING DATA THROUGH REDUNDANT DATA STORAGE UNITS | EMC Corporation |
| 09741494 | 6948031 | METHODS AND APPARATUS FOR TRANSFERRING A DATA ELEMENT WITHIN A DATA STORAGE SYSTEM | EMC Corporation |
| 09742720 | 7051108 | METHOD AND SYSTEM OF INTERPROCESS COMMUNICATIONS | EMC Corporation |
| 09745573 | 6779150 | CRC ERROR DETECTION SYSTEM AND METHOD | EMC Corporation |
| 09745814 | 6636933 | DATA STORAGE SYSTEM HAVING CROSSBAR SWITCH WITH MULTI-STAGED ROUTING | EMC Corporation |
| 09745859 | 6604176 | DATA STORAGE SYSTEM HAVING PLURAL FAULT DOMAINS | EMC Corporation |
| 09746090 | 7103652 | AMBIGUITY-PURGING AND TEMPLATE-CONFLICT-RESOLUTION IN COMPUTER NETWORK EVENTS-NOTIFICATION | EMC Corporation |
| 09746166 | 6665812 | STORAGE ARRAY NETWORK BACKUP CONFIGURATION | EMC Corporation |
| 09746174 | 6993705 | CYCLIC REDUNDANCY CHECK (CRC) PARITY CHECK SYSTEM AND METHOD | EMC Corporation |
| 09746304 | 6781782 | METHOD AND APPARATUS FOR SAVING CALIBRATION PARAMETERS FOR A REMOVABLE CARTRIDGE | EMC Corporation |
| 09746496 | 6868516 | METHOD FOR VALIDATING WRITE DATA TO A MEMORY | EMC Corporation |
| 09747054 | 6990493 | FILE ACCESS SYSTEM | EMC Corporation |
| 09747179 | 6934724 | METHODS AND APPARATUS FOR REDUCING RESOURCE CONTENTION IN PARALLEL DATA BACKUP PROCESSES | EMC Corporation |
| 09747376 | 6583989 | COMPUTER SYSTEM | EMC Corporation |
| 09747737 | 7266817 | METHOD AND SYSTEM FOR CREATING PACKAGES FOR MULTIPLE PLATFORMS | EMC Corporation |
| 09748053 | 7260636 | METHOD AND APPARATUS FOR PREVENTING UNAUTHORIZED ACCESS BY A NETWORK DEVICE | EMC Corporation |
| 09749160 | 6751703 | DATA STORAGE SYSTEMS AND METHODS WHICH UTILIZE AN ON-BOARD CACHE | EMC Corporation |
| 09749333 | 6804690 | METHOD FOR PHYSICAL BACKUP IN DATA LOGICAL ORDER | EMC Corporation |

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|---|---|---|---|
| 09750554 | 7023924 | METHOD OF PAUSING AN MPEG CODED VIDEO STREAM | EMC Corporation |
| 09750565 | 6937770 | ADAPTIVE BIT RATE CONTROL FOR RATE REDUCTION OF MPEG CODED VIDEO | EMC Corporation |
| 09751494 | 6477618 | DATA STORAGE SYSTEM CLUSTER ARCHITECTURE | EMC Corporation |
| 09751659 | 7080375 | PARALLEL DISPATCH WAIT SIGNALING METHOD, METHOD FOR REDUCING CONTENTION OF HIGHLY CONTENDED DISPATCHER LOCK, AND RELATED OPERATING SYSTEMS, MULTIPROCESSOR COMPUTER SYSTEMS AND PRODUCTS | EMC Corporation |
| 09751684 | 7165152 | METHOD AND APPARATUS FOR MANAGING ACCESS TO STORAGE DEVICES IN A STORAGE SYSTEM WITH ACCESS CONTROL | EMC Corporation |
| 09752176 | 6813522 | METHOD OF SHARING MEMORY IN A MULTI-PROCESSOR SYSTEM INCLUDING A CLONING OF CODE AND DATA | EMC Corporation |
| 09752193 | 6708297 | METHOD AND SYSTEM FOR MONITORING ERRORS ON FIELD REPLACEABLE UNITS | EMC Corporation |
| 09752199 | 7200641 | METHOD AND SYSTEM FOR ENCODING SCSI REQUESTS FOR TRANSMISSION USING TCP/IP | EMC Corporation |
| 09753373 | 6574667 | DYNAMIC ROUTING FOR PERFORMANCE PARTITIONING IN A DATA PROCESSING NETWORK | EMC Corporation |
| 09754860 | 6862659 | UTILIZING DISK CACHE AS PART OF DISTRIBUTED CACHE | EMC Corporation |
| 09760176 | 6763521 | LOW COST STORAGE DEVICE AND METHOD OF USING THE SAME | EMC Corporation |
| 09766526 | 6826580 | DISTRIBUTED STORAGE RESOURCE MANAGEMENT IN A STORAGE AREA NETWORK | EMC Corporation |
| 09767773 | 6938122 | REMOTE MIRRORING IN A SWITCHED ENVIRONMENT | EMC Corporation |
| 09768323 | 7870195 | INTER-PROCESSOR MESSAGING | EMC Corporation |
| 09768994 | 6883018 | SCANNING A MESSAGE-LIST | EMC Corporation |
| 09769581 | 6721766 | RESTORING MULTIPLE WORK ITEMS SIMULTANEOUSLY FROM BACKUP AND DATA RESTORE | EMC Corporation |
| 09769600 | 6704886 | DATA BACKUP SYSTEM HAVING INDEPENDENT DATA RESTORE EXECUTION | EMC Corporation |
| 09769604 | 7558840 | DATA BACKUP SYSTEM HAVING A FLEXIBLE RESTORE ARCHITECTURE | EMC Corporation |
| 09774532 | 6766397 | CONTROLLING ACCESS TO A STORAGE DEVICE | EMC Corporation |
| 09776327 | 6799255 | STORAGE MAPPING AND PARTITIONING AMONG MULTIPLE HOST PROCESSORS | EMC Corporation |
| 09777002 | 7509420 | SYSTEM AND METHOD FOR INTELLIGENT, GLOBALLY DISTRIBUTED NETWORK STORAGE | EMC Corporation |
| 09777486 | 6631043 | ELIMINATION OF 3-PASS WRITE | EMC Corporation |
| 09777977 | 6578121 | FILE MAPPING SYSTEM AND RELATED TECHNIQUES | EMC Corporation |
| 09778449 | 6629105 | FACILITATING USER ADMINISTRATION OF DIRECTORY TREES | EMC Corporation |
| 09783162 | 6742146 | TECHNIQUES FOR PROVIDING DATA WITHIN A DATA STORAGE SYSTEM | EMC Corporation |

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| 09784381 | 7134138 | METHODS AND APPARATUS FOR PROVIDING SECURITY FOR A DATA STORAGE SYSTEM | EMC Corporation |
| 09794656 | 6732231 | SYSTEM AND METHOD FOR MANAGEMENT OF MIRRORED STORAGE DEVICES STORING DEVICE SERIAL NUMBERS | EMC Corporation |
| 09794696 | 6813731 | METHODS AND APPARATUS FOR ACCESSING TRACE DATA | EMC Corporation |
| 09794862 | 6732117 | TECHNIQUES FOR HANDLING CLIENT-ORIENTED REQUESTS WITHIN A DATA STORAGE SYSTEM | EMC Corporation |
| 09796078 | 6968347 | DATA RECOVERY METHOD AND APPARATUS | EMC Corporation |
| 09796168 | 7082100 | STORAGE SYSTEM ADAPTER AND METHOD OF USING SAME | EMC Corporation |
| 09796259 | 6804794 | ERROR CONDITION HANDLING | EMC Corporation |
| 09797347 | 7032228 | COMMON DEVICE INTERFACE | EMC Corporation |
| 09798571 | 6839750 | SINGLE MANAGEMENT POINT FOR A STORAGE SYSTEM OR STORAGE AREA NETWORK | EMC Corporation |
| 09798580 | 6516394 | SYSTEM AND METHOD FOR MANAGEMENT OF STORAGE DEVICES USING LABELS | EMC Corporation |
| 09800091 | 6687787 | CONFIGURATION OF A DATA STORAGE SYSTEM | EMC Corporation |
| 09800392 | 6509752 | TESTING APPARATUS WITH MECHANISM FOR PREVENTING DAMAGE TO UNIT UNDER TEST | EMC Corporation |
| 09801252 | 6553464 | OBTAINING DATA FROM A REMOTE STORAGE DEVICE | EMC Corporation |
| 09802278 | 7472093 | TARGETED DELIVERY OF INFORMATIONAL CONTENT WITH PRIVACY PROTECTION | EMC Corporation |
| 09802485 | 7716484 | SYSTEM AND METHOD FOR INCREASING THE SECURITY OF ENCRYPTED SECRETS AND AUTHENTICATION | EMC Corporation |
| 09804320 | 7363657 | USING A VIRUS CHECKER IN ONE FILE SERVER TO CHECK FOR VIRUSES IN ANOTHER FILE SERVER | EMC Corporation |
| 09804372 | 6654855 | METHOD AND APPARATUS FOR IMPROVING THE EFFICIENCY OF CACHE MEMORIES USING CHAINED METRICS | EMC Corporation |
| 09804460 | 7359507 | SERVER-ASSISTED REGENERATION OF A STRONG SECRET FROM A WEAK SECRET | EMC Corporation |
| 09804479 | 6839763 | SYSTEM AND METHOD FOR EXPEDITING TRANSFER OF DATA FROM A LOCAL STORAGE FACILITY TO A REMOTE STORAGE FACILITY | EMC Corporation |
| 09808248 | 6481527 | METHODS AND APPARATUS FOR ATTENUATING NOISE FROM A CABINET THAT HOUSES COMPUTER EQUIPMENT | EMC Corporation |
| 09808351 | 6985849 | SYSTEM AND METHOD FOR PORTABLE EMULATION OF OPERATING ENVIRONMENT | EMC Corporation |
| 09809001 | 6675274 | METHOD AND APPARATUS FOR DETERMINING VOLUME SWAPS | EMC Corporation |
| 09812740 | 6775679 | BUILDING A META FILE SYSTEM FROM FILE SYSTEM FROM FILE SYSTEM CELLS | EMC Corporation |
| 09812911 | 6718352 | METHODS AND APPARATUS FOR MANAGING A DATA SET STORED ON A DATA STORAGE DEVICE | EMC Corporation |
| 09814642 | 7088703 | MULTIPATH MULTIHOP REMOTE DATA FACILITY | EMC Corporation |
| 09814662 | 6496914 | METHOD AND SYSTEM FOR ADMINISTERING STORAGE DEVICES ON A NETWORK | EMC Corporation |

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| 09814994 | 7152178 | METHOD AND SYSTEM FOR DETECTING PATH FAILURE AND PERFORMING INPUT/OUTPUT RECOVERY IN A MULTI-PATH INPUT/OUTPUT SYSTEM | EMC Corporation |
| 09815128 | 6721812 | METHOD AND SYSTEM FOR ADAPTIVE RESOURCE MANAGEMENT | EMC Corporation |
| 09815454 | 7370351 | CROSS DOMAIN AUTHENTICATION AND SECURITY SERVICES USING PROXIES FOR HTTP ACCESS | EMC Corporation |
| 09815560 | 7219368 | ROBUST VISUAL PASSWORDS | EMC Corporation |
| 09817328 | 6671774 | METHOD AND APPARATUS FOR PERFORMING SWAP ANALYSIS | EMC Corporation |
| 09817437 | 7406682 | TRANSLATOR-COMPILER FOR CONVERTING LEGACY MANAGEMENT SOFTWARE | EMC Corporation |
| 09819012 | 6710979 | METHOD AND SYSTEM FOR HEAD RETRACTION IN A DATA STORAGE DEVICE | EMC Corporation |
| 09821045 | 6721758 | SYSTEM AND METHOD FOR USING SCHEMA ATTRIBUTES AS META-DATA IN A DIRECTORY SERVICE | EMC Corporation |
| 09821102 | 6643722 | DATA STORAGE SYSTEM HAVING DIRECTOR BOARDS WITH PLURAL PROCESSORS | EMC Corporation |
| 09821484 | 6738842 | SYSTEM HAVING PLURAL PROCESSORS AND A UNI-CAST/BROADCAST COMMUNICATION ARRANGEMENT | EMC Corporation |
| 09821485 | 6880032 | DATA STORAGE SYSTEM HAVING CONCURRENT ESCON CHANNELS | EMC Corporation |
| 09821493 | 6578128 | ADDRESS MANAGEMENT FOR A SHARED MEMORY REGION ON A MULTI-PROCESSOR CONTROLLER BOARD | EMC Corporation |
| 09822709 | 6912630 | METHOD AND APPARATUS FOR COMPUTING FILE STORAGE ELEMENTS FOR BACKUP AND RESTORE | EMC Corporation |
| 09822742 | 6411535 | POWER FACTOR CORRECTION CIRCUIT WITH INTEGRAL BRIDGE FUNCTION | EMC Corporation |
| 09823024 | 6907081 | MPEG ENCODER CONTROL PROTOCOL FOR ON-LINE ENCODING AND MPEG DATA STORAGE | EMC Corporation |
| 09824083 | 6961818 | METHOD, SYSTEM AND COMPUTER PROGRAM PRODUCT FOR MANAGING DATA IN A MIRRORED CACHE USING AN ACCESS BALANCING TECHNIQUE | EMC Corporation |
| 09829452 | 6762912 | HEAD CLEANER FOR A DISK DRIVE INTO WHICH A DISK MEDIA CARTRIDGE IS INSERTED | EMC Corporation |
| 09830747 | 6762906 | LOW PROFILE DISK DRIVE DEVICE | EMC Corporation |
| 09833906 | 6963905 | SYSTEM AND METHOD INCLUDING A COMMUNICATION INTERFACE FOR TRANSFERRING INFORMATION BETWEEN AT LEAST TWO PROCESSES | EMC Corporation |
| 09834427 | 7174561 | MPEG DUAL-CHANNEL DECODER DATA AND CONTROL PROTOCOLS FOR REAL-TIME VIDEO STREAMING | EMC Corporation |
| 09840422 | 6418488 | DATA TRANSFER STATE MACHINES | EMC Corporation |
| 09841717 | 6580584 | HEAD ASSEMBLY HAVING LEADING EDGE STEP SCHEME FOR TUNED AIR ENTRAINMENT | EMC Corporation |

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| 09845385 | 6766418 | METHOD AND APPARATUS FOR ACCESSING DATA USING A CACHE | EMC Corporation |
| 09850551 | 6594742 | CACHE MANAGEMENT VIA STATISTICALLY ADJUSTED SLOT AGING | EMC Corporation |
| 09851039 | 6886164 | SELECTION OF A RESOURCE IN A DISTRIBUTED COMPUTER SYSTEM | EMC Corporation |
| 09852580 | 7027439 | DATA STORAGE SYSTEM WITH IMPROVED NETWORK INTERFACE | EMC Corporation |
| 09854719 | 6717758 | DISK PARTITIONING TO CREATE A USABLE, LOWER CAPACITY DISK CARTRIDGE | EMC Corporation |
| 09855592 | 6785678 | METHOD OF IMPROVING THE AVAILABILITY OF A COMPUTER CLUSTERING SYSTEM THROUGH THE USE OF A NETWORK MEDIUM LINK STATE FUNCTION | EMC Corporation |
| 09855993 | 6779067 | METHOD AND APPARATUS FOR PROVIDING EXTENDED FUNCTIONALITY FOR A BUS | EMC Corporation |
| 09858032 | 6721814 | SYSTEM AND METHOD OF IMPROVING HOST PERFORMANCE CHARACTERISTICS BY INTELLIGENT SHIFT OF DATA CACHING FROM HOST TO CACHE-ENABLED MASS STORAGE SUBSYSTEM | EMC Corporation |
| 09858073 | 6496362 | METHOD AND APPARATUS FOR PROTECTING A HARD DISK DRIVE FROM SHOCK | EMC Corporation |
| 09859547 | 6687797 | ARBITRATION SYSTEM AND METHOD | EMC Corporation |
| 09859605 | 6609185 | DATA STORAGE SYSTEM HAVING MAJORITY GATE FILTER | EMC Corporation |
| 09859659 | 7010740 | DATA STORAGE SYSTEM HAVING NO-OPERATION COMMAND | EMC Corporation |
| 09860924 | 6496908 | REMOTE MIRRORING | EMC Corporation |
| 09862813 | 6760862 | METHODS AND APPARATUS FOR PERFORMING A MAINTENANCE PROCEDURE ON A DATA STORAGE SYSTEM | EMC Corporation |
| 09862828 | 7526811 | METHODS FOR DETECTING EXECUTABLE CODE WHICH HAS BEEN ALTERED | EMC Corporation |
| 09864481 | 6762362 | METHODS AND APPARATUS FOR CONNECTING A POWER SUPPLY TO MULTIPLE BACKPLANES WITHIN AN ELECTRONIC EQUIPMENT CABINET | EMC Corporation |
| 09865072 | 6611923 | SYSTEM AND METHOD FOR BACKING UP DATA STORED IN MULTIPLE MIRRORS ON A MASS STORAGE SUBSYSTEM UNDER CONTROL OF A BACKUP SERVER | EMC Corporation |
| 09866284 | 6445523 | READABLE INDELIBLE MARK ON STORAGE MEDIA | EMC Corporation |
| 09867136 | 6970959 | MULTI-EXECUTE SYSTEM CALLS | EMC Corporation |
| 09871196 | 6684397 | AUTO-INSTALL APPARATUS AND METHOD | EMC Corporation |
| 09872596 | 7145866 | VIRTUAL NETWORK DEVICES | EMC Corporation |
| 09876492 | 7149787 | APPARATUS AND METHOD FOR MIRRORING AND RESTORING DATA | EMC Corporation |
| 09877287 | 6971090 | COMMON INFORMATION MODEL (CIM) TRANSLATION TO AND FROM WINDOWS MANAGEMENT INTERFACE (WMI) IN CLIENT SERVER ENVIRONMENT | EMC Corporation |

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| 09877454 | 6778811 | OFFLINE COMPUTER PRODUCT PROMOTION METHOD AND SYSTEM | EMC Corporation |
| 09877808 | 6628513 | MASS STORAGE DEVICE MOUNTING SYSTEM | EMC Corporation |
| 09877810 | 7107337 | DATA STORAGE SYSTEM WITH INTEGRATED SWITCHING | EMC Corporation |
| 09877848 | 7346674 | CONFIGURABLE FIBRE CHANNEL LOOP SYSTEM | EMC Corporation |
| 09877862 | 7010622 | SCALABLE COMMUNICATION WITHIN A DISTRIBUTED SYSTEM USING DYNAMIC COMMUNICATION TREES | EMC Corporation |
| 09877869 | 6549979 | ADDRESS MAPPING IN MASS STORAGE DEVICE MOUNTING SYSTEM (AS AMENDED) | EMC Corporation |
| 09879269 | 6478604 | METHODS AND APPARATUS FOR FORMING AN INSULATION DISPLACEMENT CONNECTION | EMC Corporation |
| 09879347 | 6742138 | DATA RECOVERY METHOD AND APPARATUS | EMC Corporation |
| 09879431 | 6721870 | PREFETCH ALGORITHM FOR SHORT SEQUENCES | EMC Corporation |
| 09879554 | 7222257 | METHOD AND SYSTEM FOR REPAIRING A REDUNDANT ARRAY OF DISK DRIVES | EMC Corporation |
| 09879583 | 6965936 | METHOD FOR DETECTING AND RESOLVING A PARTITION CONDITION IN A CLUSTER | EMC Corporation |
| 09882167 | 6504717 | FAILURE-TOLERANT HIGH-DENSITY CARD RACK COOLING SYSTEM AND METHOD | EMC Corporation |
| 09882707 | 6862690 | HIERARCHICAL RECOVERY METHOD FOR FIBRE-CHANNEL DEVICES | EMC Corporation |
| 09885310 | 6751758 | METHOD AND SYSTEM FOR HANDLING ERRORS IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 09887498 | 6697207 | METHOD AND CIRCUIT FOR PROVIDING VELOCITY-CONTROLLED HEAD LOADING OR UNLOADING | EMC Corporation |
| 09887590 | 6717765 | METHOD AND CIRCUIT FOR SENSING BACK EMF | EMC Corporation |
| 09891020 | 7403974 | TRUE ZERO-COPY SYSTEM AND METHOD | EMC Corporation |
| 09891110 | 6640280 | OBTAINING DATA FROM A REMOTE STORAGE DEVICE USING MULTIPLE JOBS PER DEVICE ON RA | EMC Corporation |
| 09891143 | 7577957 | MULTIPLE JOBS PER DEVICE THAT ARE LINKED VIA A DEVICE RECORD FOR SERVICING BY DIFFERENT ADAPTERS | EMC Corporation |
| 09891695 | 6697813 | DATA STRUCTURES AND METHODS FOR IMAGING COMPUTER READABLE MEDIA | EMC Corporation |
| 09892161 | 7389312 | MIRRORING NETWORK DATA TO ESTABLISH VIRTUAL STORAGE AREA NETWORK | EMC Corporation |
| 09893295 | 6732194 | METHOD AND APPARATUS FOR MULTI-SEQUENTIAL DATA OPERATIONS | EMC Corporation |
| 09893825 | 7444662 | VIDEO FILE SERVER CACHE MANAGEMENT USING MOVIE RATINGS FOR RESERVATION OF MEMORY AND BANDWIDTH RESOURCES | EMC Corporation |
| 09894422 | 7613806 | SYSTEM AND METHOD FOR MANAGING REPLICATION SETS OF DATA DISTRIBUTED OVER ONE OR MORE COMPUTER SYSTEMS | EMC Corporation |
| 09894804 | 6560098 | DISK DRIVE MODULE | EMC Corporation |
| 09895466 | 7581048 | METHOD AND APPARATUS FOR PROVIDING CONTINUOUS COMMUNICATION BETWEEN COMPUTERS | EMC Corporation |
| 09895941 | 6954833 | EXPEDITED DYNAMIC MIRROR SERVICE POLICY | EMC Corporation |

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| 09896860 | 7178145 | QUEUES FOR SOFT AFFINITY CODE THREADS AND HARD AFFINITY CODE THREADS FOR ALLOCATION OF PROCESSORS TO EXECUTE THE THREADS IN A MULTI-PROCESSOR SYSTEM | EMC Corporation |
| 09900295 | 6502162 | CONFIGURING VECTORS OF LOGICAL STORAGE UNITS FOR DATA STORAGE PARTITIONING AND SHARING | EMC Corporation |
| 09901534 | 6623177 | SYSTEMS AND METHODS FOR PROVIDING FIBER OPTIC COMMUNICATIONS BETWEEN CIRCUIT BOARDS | EMC Corporation |
| 09903113 | 6947257 | SYSTEM AND METHOD OF INTRODUCING A PREFERENTIAL CURVATURE TO A FLEXIBLE MEDIUM FOR REDUCED MEDIUM VIBRATION AND SENSOR TO MEDIUM SPACING WITH A DISK DRIVE HEAD STACK ASSEMBLY HAVING A NON-ZERO STATIC ROLL ATTITUDE | EMC Corporation |
| | | | |
| 09909025 | 7200609 | ATTRIBUTE BASED RESOURCE ALLOCATION | EMC Corporation |
| 09915854 | 6886116 | DATA STORAGE SYSTEM ADAPTED TO VALIDATE ERROR DETECTION LOGIC USED IN SUCH SYSTEM | EMC Corporation |
| 09916842 | 6672914 | METHODS AND APPARATUS FOR MOUNTING A BUS BAR ASSEMBLY | EMC Corporation |
| 09920169 | 6530002 | METHOD AND APPARATUS FOR MULTIPLE DISK DRIVE ACCESS IN A MULTI-PROCESSOR/MULTI-DISK DRIVE SYSTEM | EMC Corporation |
| 09924777 | 6763446 | SYSTEMS AND METHODS FOR HANDLING STORAGE ACCESS REQUESTS | EMC Corporation |
| 09924923 | 6807618 | ADDRESS TRANSLATION | EMC Corporation |
| 09928207 | 6904541 | METHODS AND APPARATUS FOR PROVIDING POWER TO ELECTRONIC CIRCUITRY | EMC Corporation |
| 09929439 | 6687801 | ADAPTIVE COPY PENDING OFF MODE | EMC Corporation |
| 09933468 | 7401271 | TESTING SYSTEM AND METHOD OF USING SAME | EMC Corporation |
| 09935556 | 6697208 | SYSTEM AND METHODS FOR USING OFFSET INFORMATION ON A DATA STORAGE MEDIUM | EMC Corporation |
| 09940903 | 7249193 | SRDF ASSIST | EMC Corporation |
| 09941060 | 6636418 | METHODS AND APPARATUS FOR INSTALLING ELECTRONIC CABINETS USING IMPROVED STABILIZATION TECHNIQUES | EMC Corporation |
| 09941975 | 6482042 | TECHNIQUES FOR ACCESSING A CIRCUIT BOARD UTILIZING AN IMPROVED ADAPTOR | EMC Corporation |
| 09943244 | 6621692 | COMPUTERIZED SYSTEM HAVING AN INTERFACE APPARATUS WITH IMPROVED MOUNTING FEATURES | EMC Corporation |
| 09944287 | | [REDACTED] | EMC Corporation |
| 09944288 | 7783727 | DYNAMIC HOST CONFIGURATION PROTOCOL IN A STORAGE ENVIRONMENT | EMC Corporation |
| 09945657 | 6832330 | REVERSIBLE MIRRORED RESTORE OF AN ENTERPRISE LEVEL PRIMARY DISK | EMC Corporation |
| 09945939 | 7111298 | INTER-PROCESSOR COMPETITION FOR A SHARED RESOURCE | EMC Corporation |
| 09946005 | 6978282 | INFORMATION REPLICATION SYSTEM HAVING AUTOMATED REPLICATION STORAGE | EMC Corporation |

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| 09946007 | 7076685 | INFORMATION REPLICATION SYSTEM MOUNTING PARTIAL DATABASE REPLICATIONS | EMC Corporation |
| 09946078 | 7096250 | INFORMATION REPLICATION SYSTEM HAVING ENHANCED ERROR DETECTION AND RECOVERY | EMC Corporation |
| 09950165 | 7023869 | DATA STORAGE SYSTEM WITH ONE OR MORE INTEGRATED SERVER-LIKE BEHAVIORS | EMC Corporation |
| 09950546 | 6594739 | MEMORY SYSTEM AND METHOD OF USING SAME | EMC Corporation |
| 09951016 | 6715039 | CACHE SLOT PROMOTION IN A REPLACEMENT QUEUE CACHE USING DETERMINATIONS OF PROBABILITIES AND COSTS | EMC Corporation |
| 09951853 | 6980594 | GENERATION OF MPEG SLOW MOTION PLAYOUT | EMC Corporation |
| 09953226 | 7203925 | GRAPHICAL COMPILER | EMC Corporation |
| 09955225 | 6968091 | INSERTION OF NOISE FOR REDUCTION IN THE NUMBER OF BITS FOR VARIABLE-LENGTH CODING OF (RUN, LEVEL) PAIRS | EMC Corporation |
| 09955505 | 6959116 | LARGEST MAGNITUDE INDEX SELECTION FOR SCALING OF BLOCK CODED VIDEO | EMC Corporation |
| 09957219 | 7290017 | SYSTEM AND METHOD FOR MANAGEMENT OF DATA REPLICATION | EMC Corporation |
| 09957278 | 7155463 | SYSTEM AND METHOD FOR REPLICATION OF ONE OR MORE DATABASES | EMC Corporation |
| 09960177 | 6578126 | MEMORY SYSTEM AND METHOD OF USING SAME | EMC Corporation |
| 09960713 | 6823349 | METHOD AND SYSTEM FOR ESTABLISHING, MAINTAINING, AND USING A PERSISTENT FRACTURE LOG | EMC Corporation |
| 09962408 | 8055555 | MEDIATION DEVICE FOR SCALABLE STORAGE SERVICE | EMC Corporation |
| 09962485 | 7401322 | SOFTWARE DEBUGGING TOOL | EMC Corporation |
| 09962790 | 7552056 | SCALABLE STORAGE SERVICE REGISTRATION APPLICATION | EMC Corporation |
| 09964977 | 7269648 | RESOLVING MULTIPLE MASTER NODE CONFLICT IN A DDB | EMC Corporation |
| 09965168 | 6415292 | SHUTTLE-BASED MECHANISM FOR NUMBERING CONCURRENT CHAINS OF INDEPENDENT DATA TRANSFERS | EMC Corporation |
| 09965393 | 7020669 | APPARATUS, METHOD AND SYSTEM FOR WRITING DATA TO NETWORK ACCESSIBLE FILE SYSTEM WHILE MINIMIZING RISK OF CACHE DATA LOSS/DATA CORRUPTION | EMC Corporation |
| 09965421 | 6633955 | FOUR WAY SUPPORT FOR DYNAMIC MIRROR SERVICE POLICY | EMC Corporation |
| 09965430 | 7120690 | MANAGING A DISTRIBUTED DIRECTORY DATABASE | EMC Corporation |
| 09965431 | 7024517 | SYSTEM AND METHOD FOR CONFIGURING DATA STORAGE IN ACCORDANCE WITH WORKLOAD REQUIREMENTS | EMC Corporation |
| 09965897 | 7237018 | ORDERED WRITES FOR SRDF ASSIST | EMC Corporation |
| 09965926 | 7237040 | ERROR RECOVERY FOR SRDF ASSIST | EMC Corporation |
| 09966322 | 6525273 | CABLE MANAGEMENT | EMC Corporation |
| 09966475 | 7032186 | METHODS AND APPARATUS FOR REPRESENTING RESOURCES IN A COMPUTING SYSTEM ENVIRONMENT | EMC Corporation |

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| 09966529 | 6966033 | METHOD AND APPARATUS FOR GRAPHICALLY MANAGING RESOURCES | EMC Corporation |
| 09966615 | 7010796 | METHODS AND APPARATUS PROVIDING REMOTE OPERATION OF AN APPLICATION PROGRAMMING INTERFACE | EMC Corporation |
| 09966639 | 6874046 | METHOD AND APPARATUS FOR ENHANCING ACCESS TO REDUNDANT DATA STORAGE FACILITIES | EMC Corporation |
| 09966709 | 8417788 | FILE SYSTEM FOR VIRTUAL LOCAL AREA NETWORK | EMC Corporation |
| 09966878 | 6978422 | METHODS AND APPARATUS FOR DISPLAYING MANAGED RESOURCE INFORMATION | EMC Corporation |
| 09967111 | 7254814 | METHODS AND APPARATUS FOR MANAGING PLUG-IN SERVICES | EMC Corporation |
| 09969079 | 6862697 | METHOD AND SYSTEM FOR PSEUDO-RANDOM TESTING A FAULT TOLERANT NETWORK | EMC Corporation |
| 09969295 | 6826582 | METHOD AND SYSTEM FOR USING FILE SYSTEMS FOR CONTENT MANAGEMENT | EMC Corporation |
| 09972284 | 7076636 | DATA STORAGE SYSTEM HAVING AN IMPROVED MEMORY CIRCUIT BOARD CONFIGURED TO RUN SCRIPTS | EMC Corporation |
| 09972314 | 7234021 | METHODS AND APPARATUS FOR ACCESSING DATA ELEMENTS USING IMPROVED HASHING TECHNIQUES | EMC Corporation |
| 09972321 | 6941308 | METHODS AND APPARATUS FOR ACCESSING A DOUBLY LINKED LIST IN A DATA STORAGE SYSTEM | EMC Corporation |
| 09982492 | 6842810 | RESTRICTED ACCESS DEVICES | EMC Corporation |
| | | | |
| 09989479 | 7660902 | DYNAMIC ACCESS CONTROL AND MANAGEMENT | EMC Corporation |
| 09994476 | 7602904 | ORDER INVARIANT FUZZY COMMITMENT SYSTEM | EMC Corporation |
| 09995464 | 6968369 | REMOTE DATA FACILITY OVER AN IP NETWORK | EMC Corporation |
| 09995919 | 6738268 | METHODS AND APPARATUS FOR PROVIDING POWER SIGNALS TO OPERATING CIRCUITRY MOUNTED ON CIRCUIT BOARDS | EMC Corporation |
| 09996831 | 6678161 | FRAME CONNECTING TECHNIQUES FOR USE IN ELECTRONIC SYSTEMS | EMC Corporation |
| 09997643 | 7296125 | PRESERVING A SNAPSHOT OF SELECTED DATA OF A MASS STORAGE SYSTEM | EMC Corporation |
| 09997656 | 6941490 | DUAL CHANNEL RESTORATION OF DATA BETWEEN PRIMARY AND BACKUP SERVERS | EMC Corporation |
| 09997810 | 6862632 | DYNAMIC RDF SYSTEM FOR TRANSFERRING INITIAL DATA BETWEEN SOURCE AND DESTINATION VOLUME WHEREIN DATA MAY BE RESTORED TO EITHER VOLUME AT SAME TIME OTHER DATA IS WRITTEN | EMC Corporation |
| 09997926 | 6859894 | SYSTEM AND METHOD FOR RISK MANAGEMENT OF ERRORS IN SOFTWARE PROGRAM CODE | EMC Corporation |
| 09998494 | 6701392 | HIERARCHICAL APPROACH TO IDENTIFYING CHANGING DEVICE CHARACTERISTICS | EMC Corporation |
| 09998683 | 6976139 | REVERSING A COMMUNICATION PATH BETWEEN STORAGE DEVICES | EMC Corporation |

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| 10/962301 | 7217982 | PHOTODIODE HAVING VOLTAGE TUNABLE SPECTRAL RESPONSE | EMC Corporation |
| 10001317 | 6973537 | DISK CACHE INTERFACING SYSTEM AND METHOD (AS AMENDED) | EMC Corporation |
| 10001717 | 6782444 | DIGITAL DATA STORAGE SUBSYSTEM INCLUDING DIRECTORY FOR EFFICIENTLY PROVIDING FORMATTING INFORMATION FOR STORED RECORDS | EMC Corporation |
| 10002053 | 6594726 | DIGITAL DATA STORAGE SUBSYSTEM INCLUDING ARRANGEMENT FOR EFFICIENTLY CONTROLLING FAST WRITE STORAGE OPERATION | EMC Corporation |
| 10004090 | 7174422 | DATA STORAGE DEVICE WITH TWO-TIER RAID CONTROL CIRCUITRY | EMC Corporation |
| 10007003 | 7685126 | SYSTEM AND METHODS FOR PROVIDING A DISTRIBUTED FILE SYSTEM UTILIZING METADATA TO TRACK INFORMATION ABOUT DATA STORED THROUGHOUT THE SYSTEM | EMC Corporation |
| 10007762 | 6681390 | UPGRADE OF A PROGRAM | EMC Corporation |
| 10010769 | 7363494 | METHOD AND APPARATUS FOR PERFORMING ENHANCED TIME-BASED AUTHENTICATION | EMC Corporation |
| 10010778 | 7010620 | NETWORK ADAPTER HAVING INTEGRATED SWITCHING CAPABILITIES AND PORT CIRCUITRY THAT MAY BE USED IN REMOTE MIRRORING | EMC Corporation |
| 10012007 | 6804733 | OPTIMIZER IMPROVED DATA COMPRESSION | EMC Corporation |
| 10013184 | 7113936 | OPTIMIZER IMPROVED STATISTICS COLLECTION | EMC Corporation |
| 10016440 | 6941503 | METHOD AND APPARATUS FOR RETAINING ERROR-CONTROL CODE PROTECTION ACROSS BLOCK-SIZE DISCONTINUITIES | EMC Corporation |
| 10017183 | 7596791 | METHODS AND TECHNIQUES FOR DELIVERING RICH JAVA APPLICATIONS OVER THIN-WIRE CONNECTIONS WITH HIGH PERFORMANCE AND SCALABILITY | EMC Corporation |
| 10017304 | 7539745 | NETWORK MANAGEMENT FOR REPLICATION OF DATA STORED IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10020146 | 7120161 | NETWORK ADAPTER AND METHOD OF USING SAME | EMC Corporation |
| 10021949 | 6910145 | DATA TRANSMISSION ACROSS ASYNCHRONOUS CLOCK DOMAINS | EMC Corporation |
| 10022080 | 7020754 | METHOD AND SYSTEM FOR MAINTAINING DATA INTEGRITY USING DUAL WRITE OPERATIONS | EMC Corporation |
| 10024796 | 8549048 | WORKFLOW DATABASE FOR SCALABLE STORAGE SERVICE | EMC Corporation |
| 10024971 | 7146387 | SYSTEM AND METHOD FOR CONFIGURING AND PREFORMING APPLICATION BACKUPS AND RESTORES IN DIVERSE ENVIRONMENTS | EMC Corporation |
| 10025005 | 7024427 | VIRTUAL FILE SYSTEM | EMC Corporation |
| 10026194 | 6680847 | ELECTRONIC CIRCUITRY ENCLOSURE WITH AIR VENTS THAT COMPLY WITH EMISSIONS AND SAFETY STANDARDS | EMC Corporation |
| 10027694 | 7054910 | DATA REPLICATION FACILITY FOR DISTRIBUTED COMPUTING ENVIRONMENTS | EMC Corporation |
| 10029054 | 6534716 | FIBRE CHANNEL CABLE | EMC Corporation |

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| 10029189 | 6871271 | INCREMENTALLY RESTORING A MASS STORAGE DEVICE TO A PRIOR STATE | EMC Corporation |
| 10029344 | 6934725 | MANAGEMENT OF FILE EXTENT MAPPING TO HASTEN MIRROR BREAKING IN FILE LEVEL MIRRORED BACKUPS | EMC Corporation |
| 10029638 | 7539746 | HIGHLY AVAILABLE TRANSACTION FAILURE DETECTION AND RECOVERY FOR ELECTRONIC COMMERCE TRANSACTIONS | EMC Corporation |
| 10032075 | 7266574 | IDENTIFICATION OF UPDATED FILES FOR INCREMENTAL BACKUP | EMC Corporation |
| 10032077 | 6938180 | LOGICAL RESTORES OF PHYSICALLY BACKED UP DATA | EMC Corporation |
| 10032825 | 6848017 | METHOD AND APPARATUS FOR DETERMINING CONNECTIONS IN A CROSSBAR SWITCH | EMC Corporation |
| 10034854 | 7143394 | ANALYZING SOFTWARE BEHAVIOR | EMC Corporation |
| 10036333 | 7624265 | METHODS AND APPARATUS FOR ESTABLISHING COMMUNICATIONS WITH A DATA STORAGE SYSTEM | EMC Corporation |
| 10036547 | 6799248 | CACHE MANAGEMENT SYSTEM FOR A NETWORK DATA NODE HAVING A CACHE MEMORY MANAGER FOR SELECTIVELY USING DIFFERENT CACHE MANAGEMENT METHODS | EMC Corporation |
| 10037117 | 6526487 | PERFORMING ACKNOWLEDGED OPERATIONS ON ORIGINAL AND MIRRORED COPIES OF DATA | EMC Corporation |
| 10038949 | 7054367 | EDGE DETECTION BASED ON VARIABLE-LENGTH CODES OF BLOCK CODED VIDEO | EMC Corporation |
| 10050974 | 6976134 | POOLING AND PROVISIONING STORAGE RESOURCES IN A STORAGE NETWORK | EMC Corporation |
| 10051093 | 7558264 | PACKET CLASSIFICATION IN A STORAGE SYSTEM | EMC Corporation |
| 10051164 | 7185062 | SWITCH-BASED STORAGE SERVICES | EMC Corporation |
| 10051321 | 7707304 | STORAGE SWITCH FOR STORAGE AREA NETWORK | EMC Corporation |
| 10051339 | 7421509 | ENFORCING QUALITY OF SERVICE IN A STORAGE NETWORK | EMC Corporation |
| 10051396 | 7864758 | VIRTUALIZATION IN A STORAGE SYSTEM | EMC Corporation |
| 10051415 | 7404000 | PROTOCOL TRANSLATION IN A STORAGE SYSTEM | EMC Corporation |
| 10054241 | 6988152 | DATA STORAGE SYSTEM | EMC Corporation |
| 10056401 | 6574703 | INITIALIZING SELECTED EXTENTS OF A STORAGE DEVICE | EMC Corporation |
| 10058651 | 7093021 | ELECTRONIC DEVICE AND METHOD FOR SECURE AUTHENTICATION OF OBJECTS SUCH AS COMPUTERS IN A DATA NETWORK | EMC Corporation |
| 10061081 | 7007141 | ARCHIVAL DATA STORAGE SYSTEM AND METHOD | EMC Corporation |
| 10061895 | 7487535 | AUTHENTICATION ON DEMAND IN A DISTRIBUTED NETWORK ENVIRONMENT | EMC Corporation |
| 10068079 | 6941492 | DEBUGGING TOOL FOR EFFICIENT SWITCHING BETWEEN TARGETS IN A MULTI-PROCESSOR ENVIRONMENT | EMC Corporation |
| 10072988 | | SYSTEM AND METHOD OF INDEXING UNIQUE ELECTRONIC MAIL MESSAGES AND USES FOR THE SAME | EMC Corporation |
| 10073708 | 7031966 | METHOD FOR MAKING INDEPENDENT DATA COPIES IN A DATA PROCESSING SYSTEM | EMC Corporation |

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|---|---|---|---|
| 10074027 | 6792510 | SYSTEM AND METHOD FOR UPDATING A CACHE | EMC Corporation |
| 10076016 | 6879556 | METHOD AND APPARATUS FOR OPTICAL DATA STORAGE | EMC Corporation |
| 10078923 | 6757790 | DISTRIBUTED, SCALABLE DATA STORAGE FACILITY WITH CACHE MEMORY | EMC Corporation |
| 10079090 | 6985914 | CLUSTER META FILE SYSTEM OF FILE SYSTEM CELLS MANAGED BY RESPECTIVE DATA MOVERS OF A NETWORK FILE SERVER | EMC Corporation |
| 10080321 | 7177853 | CACHE MANAGEMENT VIA STATISTICALLY ADJUSTED TIMESTAMP QUEUE | EMC Corporation |
| 10081682 | 7406574 | MANAGEMENT OF INVALID TRACKS | EMC Corporation |
| 10083195 | 6736308 | SYSTEMS AND METHODS FOR DISTRIBUTING SOLDER PASTE USING A TOOL HAVING A SOLDER PASTE APERTURE WITH A NON-CIRCULAR CROSS-SECTIONAL SHAPE | EMC Corporation |
| 10083670 | 7181727 | PROVIDING DATA INDICATIVE OF THE PERFORMANCE OF A COMPETING ALGORITHM AND AN INCUMBENT ALGORITHM | EMC Corporation |
| 10093142 | 7093018 | METHODS, SYSTEMS, AND DATA STRUCTURES TO CONNECT SERVICES | EMC Corporation |
| 10098499 | 7103637 | NETWORK FILE SHARING METHOD AND SYSTEM | EMC Corporation |
| 10100458 | 6973593 | SYSTEM ANALYZER FOR A DATA STORAGE SYSTEM | EMC Corporation |
| 10100520 | 7024593 | END-TO-END CHECKSUMMING FOR DATABASE ENVIRONMENTS | EMC Corporation |
| 10100560 | 7062503 | SHUTTLE-BASED MECHANISM FOR NUMBERING CONCURRENT CHAINS OF INDEPENDENT DATA TRANSFERS | EMC Corporation |
| 10102460 | 6845556 | TECHNIQUES FOR REWORKING CIRCUIT BOARDS WITH NI/AU FINISH | EMC Corporation |
| 10103012 | 7058835 | SYSTEM, METHOD AND APPARATUS FOR CONTROLLING SUPPLY OF BACKUP POWER TO FIRST AND SECOND POWER PLANES IN THE EVENT OF A POWER FAILURE OF A MAIN POWER SUPPLY | EMC Corporation |
| 10104146 | 7386835 | TECHNIQUE FOR GRAPHICAL USER INTERFACE MODIFICATION | EMC Corporation |
| 10105492 | 6952699 | METHOD AND SYSTEM FOR MIGRATING DATA WHILE MAINTAINING ACCESS TO DATA WITH USE OF THE SAME PATHNAME | EMC Corporation |
| 10105821 | 6922761 | METHOD AND SYSTEM FOR MIGRATING DATA | EMC Corporation |
| 10105976 | 7080102 | METHOD AND SYSTEM FOR MIGRATING DATA WHILE MAINTAINING HARD LINKS | EMC Corporation |
| 10106337 | 7178146 | PIZZA SCHEDULER | EMC Corporation |
| 10109013 | 7350149 | BACKUP REPORTING FRAMEWORK GRAPHICAL USER INTERFACE | EMC Corporation |
| 10109036 | 7404145 | GENERIC MECHANISM FOR REPORTING ON BACKUPS | EMC Corporation |
| 10109244 | 7228353 | GENERATING AND LAUNCHING REMOTE METHOD INVOCATION SERVERS FOR INDIVIDUAL CLIENT APPLICATIONS | EMC Corporation |
| 10109499 | 6795904 | SYSTEM AND METHOD FOR IMPROVING PERFORMANCE OF A DATA BACKUP OPERATION | EMC Corporation |

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|---|---|---|---|
| 10109504 | 6715048 | A SYSTEM AND METHOD FOR EFFICIENTLY PERFORMING A RESTORE OPERATION IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10109583 | 6907483 | DATA STORAGE SYSTEM HAVING DUMMY PRINTED CIRCUIT BOARDS WITH JUMPERS | EMC Corporation |
| 10109603 | 6868479 | DATA STORAGE SYSTEM HAVING REDUNDANT SERVICE PROCESSORS | EMC Corporation |
| 10109614 | 6597232 | DATA STORAGE HAVING ENVIRONMENTAL COMMUNICATION MODULE (ECM) | EMC Corporation |
| 10109997 | 6877059 | COMMUNICATIONS ARCHITECTURE FOR A HIGH THROUGHPUT STORAGE PROCESSOR | EMC Corporation |
| 10112089 | 6865643 | COMMUNICATIONS ARCHITECTURE FOR A HIGH THROUGHPUT STORAGE PROCESSOR PROVIDING USER DATA PRIORITY ON SHARED CHANNELS | EMC Corporation |
| 10112209 | 6813689 | COMMUNICATIONS ARCHITECTURE FOR A HIGH THROUGHPUT STORAGE PROCESSOR EMPLOYING EXTENSIVE I/O PARALLELIZATION | EMC Corporation |
| 10112342 | 7774844 | INTRUSION DETECTION THROUGH STORAGE MONITORING | EMC Corporation |
| 10112598 | 6877061 | DATA STORAGE SYSTEM HAVING DUMMY PRINTED CIRCUIT BOARDS | EMC Corporation |
| 10113023 | 6792506 | MEMORY ARCHITECTURE FOR A HIGH THROUGHPUT STORAGE PROCESSOR | EMC Corporation |
| 10113027 | 7209979 | STORAGE PROCESSOR ARCHITECTURE FOR HIGH THROUGHPUT APPLICATIONS PROVIDING EFFICIENT USER DATA CHANNEL LOADING | EMC Corporation |
| 10113168 | 7752316 | METHOD AND SYSTEM FOR SECURING NETWORK ACCESS TO DATA STORED IN A DATA STORAGE SYSTEM | EMC Corporation |
| 10113249 | 6901477 | PROVISION OF A VICTIM CACHE WITHIN A STORAGE CACHE HIERARCHY | EMC Corporation |
| 10113307 | 7870239 | SYSTEM AND METHOD FOR SECURING NETWORK ACCESS TO DYNAMICALLY UPDATEABLE DATA STORED IN A DATA STORAGE SYSTEM | EMC Corporation |
| 10113368 | 7266538 | METHOD AND APPARATUS FOR CONTROLLING ACCESS TO DATA IN A DATA STORAGE SYSTEM | EMC Corporation |
| 10116369 | 7010554 | DELEGATION OF METADATA MANAGEMENT IN A STORAGE SYSTEM BY LEASING OF FREE FILE SYSTEM BLOCKS AND I-NODES FROM A FILE SYSTEM OWNER | EMC Corporation |
| 10117397 | 6544392 | METHOD FOR MANUFACTURING PCB'S | EMC Corporation |
| 10118518 | 6542974 | METHOD AND APPARATUS FOR INDEPENDENT AND SIMULTANEOUS ACCESS TO A COMMON DATA SHEET | EMC Corporation |
| 10120016 | 7340489 | VIRTUAL STORAGE DEVICES | EMC Corporation |
| 10120957 | 6957285 | DATA STORAGE SYSTEM | EMC Corporation |
| 10122556 | 7076690 | METHOD AND APPARATUS FOR MANAGING ACCESS TO VOLUMES OF STORAGE | EMC Corporation |
| 10122601 | 6889309 | METHOD AND APPARATUS FOR IMPLEMENTING AN ENTERPRISE VIRTUAL STORAGE SYSTEM | EMC Corporation |
| 10123661 | 7330956 | BUCKET BASED MEMORY ALLOCATION | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
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| 10124630 | 7277953 | INTEGRATED PROCEDURE FOR PARTITIONING NETWORK DATA SERVICES AMONG MULTIPLE SUBSCRIBERS | EMC Corporation |
| 10124881 | 7383357 | IMPLEMENTING MANAGED NETWORK SERVICES FOR CUSTOMERS WITH DUPLICATE IP NETWORKS | EMC Corporation |
| 10126711 | 7159085 | METHOD OF ALLOWING POINT-IN-TIME VIEW OF DATA ON A DISK | EMC Corporation |
| 10132434 | 7319661 | HIGH AVAILABILITY FOR COMMUNICATION FOR WIRELESS NETWORKS | EMC Corporation |
| 10132769 | 7240323 | PLUG AND PLAY INTERFACE FOR USER ACTIONS | EMC Corporation |
| 10133392 | 7634557 | APPARATUS AND METHOD FOR NETWORK ANALYSIS | EMC Corporation |
| 10134420 | 6983353 | METHOD AND APPARATUS FOR ENHANCING OPERATIONS IN DISK ARRAY STORAGE DEVICES | EMC Corporation |
| 10135070 | 6513102 | INTERNAL COPY FOR A STORAGE CONTROLLER | EMC Corporation |
| 10139490 | 6988130 | VIRTUAL PORTS FOR PARTITIONING OF DATA STORAGE | EMC Corporation |
| 10139500 | 6637641 | SYSTEMS AND METHODS FOR MANUFACTURING A CIRCUIT BOARD | EMC Corporation |
| 10142164 | 6581143 | DATA PROCESSING METHOD AND APPARATUS FOR ENABLING INDEPENDENT ACCESS TO REPLICATED DATA | EMC Corporation |
| 10142478 | 6772198 | SYSTEM AND METHOD FOR RESTORING PREVIOUSLY BACKED-UP DATA IN A MASS STORAGE SUBSYSTEM | EMC Corporation |
| 10145932 | 6542944 | METHOD AND APPARATUS FOR BALANCING WORKLOADS AMONG PATHS IN A MULTI-PATH COMPUTER SYSTEM BASED ON THE STATE OF PREVIOUS I/O OPERATIONS | EMC Corporation |
| 10147751 | 7546364 | REPLICATION OF REMOTE COPY DATA FOR INTERNET PROTOCOL (IP) TRANSMISSION | EMC Corporation |
| 10152080 | 6834330 | PRE-FETCH OF RECORDS IDENTIFIED BY AN I/O TRACE | EMC Corporation |
| 10153583 | 7124171 | IN A NETWORKED COMPUTING CLUSTER STORAGE SYSTEM AND PLURALITY OF SERVERS SHARING FILES, IN THE EVENT OF SERVER UNAVAILABILITY, TRANSFERRING A FLOATING IP NETWORK ADDRESS FROM FIRST SERVER TO SECOND SERVER TO ACCESS AREA OF DATA | EMC Corporation |
| 10154269 | 6826337 | METHOD AND APPARATUS FOR TRANSMITTING FIBRE-CHANNEL AND NON-FIBRE CHANNEL SIGNALS THROUGH A COMMON CABLE | EMC Corporation |
| 10155299 | 7383330 | METHOD FOR MAPPING A NETWORK FABRIC | EMC Corporation |
| 10156574 | 6615284 | METHOD AND APPARATUS FOR PERFORMING INPUT/OUTPUT OPERATIONS BETWEEN REQUESTING DEVICE AND RESPONDING DEVICE (AS AMENDED) | EMC Corporation |
| 10157427 | 6609183 | METHOD AND SYSTEM FOR MIRRORING AND ARCHIVING MASS STORAGE | EMC Corporation |
| 10166433 | 6694405 | METHOD FOR ANALYZING DISK SEEK TIMES IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| 10171288 | 6990520 | SYSTEM AND METHOD FOR MANAGING COMPUTER NETWORKS | EMC Corporation |

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| 10172615 | 7130899 | ROBUST INDICATION PROCESSING | EMC Corporation |
| 10174115 | 6889301 | DATA STORAGE SYSTEM | EMC Corporation |
| 10175811 | 7203738 | SYSTEM AND METHOD FOR DISTRIBUTING APPLICATION OBJECTS | EMC Corporation |
| 10178085 | 7143393 | METHOD FOR CACHE MANAGEMENT FOR POSITIONING CACHE SLOT | EMC Corporation |
| 10179113 | 7062675 | DATA STORAGE CACHE SYSTEM SHUTDOWN SCHEME | EMC Corporation |
| 10179421 | 7039659 | METHOD AND APPARATUS FOR MAKING DIFFERENTIAL INDEPENDENT DATA COPIES IN A DATA PROCESSING SYSTEM | EMC Corporation |
| 10179536 | 6865648 | DATA STRUCTURE FOR WRITE PENDING | EMC Corporation |
| 10179753 | 6941429 | SYSTEM AND METHOD FOR IMPROVING PERFORMANCE OF A DATA BACKUP OPERATION | EMC Corporation |
| 10180639 | 8145788 | DISTRIBUTED ISP LOAD BALANCER | EMC Corporation |
| 10180703 | 6820035 | SYSTEM AND METHOD FOR DETERMINING WORKLOAD CHARACTERISTICS FOR ONE OR MORE APPLICATIONS OPERATING IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10180704 | 6944702 | DATA STORAGE SYSTEM | EMC Corporation |
| 10180716 | 7035970 | SYSTEM AND METHOD FOR DETERMINING WORKLOAD CHARACTERISTICS FOR ONE OR MORE APPLICATIONS OPERATING IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10180749 | 6914784 | DATA STORAGE SYSTEM CABINET | EMC Corporation |
| 10180750 | 6934158 | DISK DRIVE SYSTEM FOR A DATA STORAGE SYSTEM | EMC Corporation |
| 10180751 | 7117305 | DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER | EMC Corporation |
| 10180805 | 8463781 | PRE-FETCH OF DATA RECORDS IDENTIFIED BY AN INDEX RECORD | EMC Corporation |
| 10180849 | 6775826 | SYSTEM AND METHOD FOR REPLAYING WORKLOAD DATA IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10184495 | 6716072 | SYSTEMS AND METHODS FOR DISPOSING A CIRCUIT BOARD COMPONENT ON A CIRCUIT BOARD USING A SOLDERING PIN | EMC Corporation |
| 10185814 | 6701393 | SYSTEMS AND METHODS FOR MANAGING STORAGE LOCATION DESCRIPTORS | EMC Corporation |
| 10185898 | 7089379 | LARGE HIGH BANDWIDTH MEMORY SYSTEM | EMC Corporation |
| 10186250 | 7003527 | METHODS AND APPARATUS FOR MANAGING DEVICES WITHIN STORAGE AREA NETWORKS | EMC Corporation |
| 10188626 | 7546354 | DYNAMIC NETWORK BASED STORAGE WITH HIGH AVAILABILITY | EMC Corporation |
| 10196867 | 6920537 | APPARATUS AND METHODS FOR COPYING, BACKING UP AND RESTORING LOGICAL OBJECTS IN A COMPUTER STORAGE SYSTEM BY TRANSFERRING BLOCKS OUT OF ORDER OR IN PARALLEL | EMC Corporation |
| 10198005 | 7149960 | METHOD AND APPARATUS FOR CONTROLLING CREATION AND MANAGEMENT OF PAGES OF PORTAL CONTENT IN A DIRECTORY | EMC Corporation |

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| 10206377 | 7308417 | METHOD FOR CREATING AND DISPLAYING A MULTI-DIMENSIONAL BUSINESS MODEL COMPARATIVE STATIC | EMC Corporation |
| 10209774 | 6601133 | MAILBOX FOR CONTROLLING STORAGE SUBSYSTEM RECONFIGURATIONS | EMC Corporation |
| 10213241 | 6792518 | DATA STORAGE SYSTEM HAVING META BIT MAPS FOR INDICATING WHETHER DATA BLOCKS ARE INVALID IN SNAPSHOT COPIES | EMC Corporation |
| 10213242 | 6934822 | ORGANIZATION OF MULTIPLE SNAPSHOT COPIES IN A DATA STORAGE SYSTEM | EMC Corporation |
| 10213335 | 6957362 | INSTANTANEOUS RESTORATION OF A PRODUCTION COPY FROM A SNAPSHOT COPY IN A DATA STORAGE SYSTEM | EMC Corporation |
| 10215394 | 6943463 | SYSTEM AND METHOD OF TESTING CONNECTIVITY BETWEEN A MAIN POWER SUPPLY AND A STANDBY POWER SUPPLY | EMC Corporation |
| 10215573 | 6695149 | TECHNIQUES FOR FASTENING A PANEL TO AN ELECTRONIC CABINET FRAME | EMC Corporation |
| 10216030 | 7725730 | CRYPTOGRAPHIC METHODS AND APPARATUS FOR SECURE AUTHENTICATION | EMC Corporation |
| 10224006 | 6944726 | DISTRIBUTED BACKGROUND TRACK PROCESSING | EMC Corporation |
| 10224918 | 7117386 | SAR RESTART AND GOING HOME PROCEDURES | EMC Corporation |
| 10225021 | 7024528 | STORAGE AUTOMATED REPLICATION PROCESSING | EMC Corporation |
| 10225916 | 6618818 | RESOURCE ALLOCATION THROTTLING IN REMOTE DATA MIRRORING SYSTEM | EMC Corporation |
| 10226845 | 6909052 | TECHNIQUES FOR MAKING A CIRCUIT BOARD WITH IMPROVED IMPEDANCE CHARACTERISTICS | EMC Corporation |
| 10228513 | 7120721 | FIBRE CHANNEL ARCHITECTURE PORT HAVING OPTICAL AND COPPER CONNECTORS | EMC Corporation |
| 10229259 | 6584545 | MAXIMIZING SEQUENTIAL OUTPUT IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| 10229685 | 7003702 | END-TO-END CHECKSUMMING FOR READ OPERATIONS | EMC Corporation |
| 10229730 | 7694344 | METHOD AND SYSTEM FOR ENFORCING NETWORK SECURITY BY PRESERVING EVENT EXECUTION INFORMATION UTILIZING A SERVICE EVENT STACK | EMC Corporation |
| 10235137 | 6807619 | ADVANCING BANK POINTER IN PRIME NUMBERS UNIT | EMC Corporation |
| 10238219 | 6993581 | METHOD AND APPARATUS FOR PROVIDING SECURE ACCESS TO A COMPUTER SYSTEM RESOURCE | EMC Corporation |
| 10238806 | 6993589 | METHOD AND APPARATUS FOR PROVIDING SECURE ACCESS TO A COMPUTER SYSTEM RESOURCE | EMC Corporation |
| 10242176 | 7136489 | METHOD AND SYSTEM FOR ENHANCING NETWORK SECURITY USING A MULTILATERAL AUTHORIZATION MECHANISM | EMC Corporation |
| 10242521 | 7076691 | ROBUST INDICATION PROCESSING FAILURE MODE HANDLING | EMC Corporation |

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| 10245895 | 6567888 | METHOD AND APPARATUS FOR EFFICIENTLY DESTAGING DATA FROM A CACHE TO TWO OR MORE NON-CONTIGUOUS STORAGE LOCATIONS | EMC Corporation |
| 10250262 | 7426726 | SYSTEM AND METHOD FOR CONFIGURING A HOST FOR OPERATIONALLY COOPERATING WITH DATA STORAGE SYSTEM AND INCLUDING SELECTIVE HOST ADAPTER SETTINGS | EMC Corporation |
| 10253255 | 6826057 | ELECTRONIC CABINET PANEL WITH IMPROVED LATCHING MECHANISM | EMC Corporation |
| 10254228 | 7065624 | SYSTEM AND METHOD FOR DETERMINING WORKLOAD CHARACTERISTICS FOR ONE OR MORE APPLICATIONS OPERATING IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10255148 | 7475124 | NETWORK BLOCK SERVICES FOR CLIENT ACCESS OF NETWORK-ATTACHED DATA STORAGE IN AN IP NETWORK | EMC Corporation |
| 10255223 | 6809505 | SYSTEM AND METHOD OF DETECTING AN IMPROPER CABLE CONNECTION IN A SYSTEM | EMC Corporation |
| 10255291 | 6901202 | STORAGE SYSTEM WITH A DISKLESS ENCLOSURE | EMC Corporation |
| 10259011 | 7356452 | SYSTEM AND METHOD FOR SIMULATING PERFORMANCE OF ONE OR MORE DATA STORAGE SYSTEMS | EMC Corporation |
| 10259053 | 6773269 | CIRCUIT BOARD ASSEMBLY WHICH UTILIZES A PIN ASSEMBLY AND TECHNIQUES FOR MAKING THE SAME | EMC Corporation |
| 10259335 | 7254741 | ATTAINING HIGH AVAILABILITY THROUGH A POWER SYSTEM BRANCH ARCHITECTURE | EMC Corporation |
| 10260945 | 7287046 | METHOD AND SYSTEM OF COMPACTING SPARSE DIRECTORIES IN A FILE SYSTEM | EMC Corporation |
| 10261168 | 7206961 | METHOD OF PRESERVING SNAPSHOTS DURING DISK-BASED RESTORE PROCESSING | EMC Corporation |
| 10261727 | 6800545 | MICRO SOLDERED CONNECTION | EMC Corporation |
| 10262684 | 6910075 | DYNAMIC RDF GROUPS | EMC Corporation |
| 10264972 | 6775905 | METHOD FOR FORMING AN IMPROVED ADAPTOR | EMC Corporation |
| 10270912 | 7793342 | SINGLE SIGN-ON WITH BASIC AUTHENTICATION FOR A TRANSPARENT PROXY | EMC Corporation |
| 10279517 | 7383442 | NESTED STRONG LOADER APPARATUS AND METHOD | EMC Corporation |
| 10281467 | 7146524 | SYSTEM AND METHODS FOR PROVIDING A DISTRIBUTED FILE SYSTEM UTILIZING METADATA TO TRACK INFORMATION ABOUT DATA STORED THROUGHOUT THE SYSTEM | EMC Corporation |
| 10281524 | 7546482 | METHOD AND APPARATUS FOR MONITORING THE STORAGE OF DATA IN A COMPUTER SYSTEM | EMC Corporation |
| 10283908 | 7945669 | METHOD AND APPARATUS FOR PROVISIONING STORAGE RESOURCES | EMC Corporation |
| 10283960 | 7653645 | MULTI-EPOCH METHOD FOR SAVING AND EXPORTING FILE SYSTEM EVENTS | EMC Corporation |
| 10283976 | 6954835 | INTERCEPTING CONTROL OF A HOST I/O PROCESS | EMC Corporation |
| 10304935 | 7040491 | TECHNIQUES FOR MANAGING A SET OF CABLES | EMC Corporation |
| 10306268 | 7340461 | DEACTIVATING VIRTUAL DEVICES AND ROLLING BACKUP | EMC Corporation |
| 10306378 | 7249130 | VIRTUAL STORAGE DEVICES | EMC Corporation |

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| 10306659 | 7266572 | RESTORING VIRTUAL DEVICES | EMC Corporation |
| 10306706 | 8032492 | SIMULTANEOUS ACTIVATION OF VIRTUAL DEVICES | EMC Corporation |
| 10308159 | 6889288 | REDUCING DATA COPY OPERATIONS FOR WRITING DATA FROM A NETWORK TO STORAGE OF A CACHED DATA STORAGE SYSTEM BY ORGANIZING CACHE BLOCKS AS LINKED LISTS OF DATA FRAGMENTS | EMC Corporation |
| 10308161 | 7028218 | REDUNDANT MULTI-PROCESSOR AND LOGICAL PROCESSOR CONFIGURATION FOR A FILE SERVER | EMC Corporation |
| 10308445 | 7284016 | CLIENT-SERVER PROTOCOL FOR DIRECTORY ACCESS OF SNAPSHOT FILE SYSTEMS IN A STORAGE SYSTEM | EMC Corporation |
| 10315412 | 7263696 | DYNAMIC WEB BASED JAR FILE FINDER | EMC Corporation |
| 10315472 | 7080225 | METHOD AND APPARATUS FOR MANAGING MIGRATION OF DATA IN A COMPUTER SYSTEM | EMC Corporation |
| 10315791 | 7376764 | METHOD AND APPARATUS FOR MIGRATING DATA IN A COMPUTER SYSTEM | EMC Corporation |
| 10316286 | 7084353 | TECHNIQUES FOR MOUNTING A CIRCUIT BOARD COMPONENT TO A CIRCUIT BOARD | EMC Corporation |
| 10318949 | 6791841 | METHODS AND APPARATUS FOR MANAGING A SET OF CABLES | EMC Corporation |
| 10320019 | 7065661 | USING REQUEST AND GRANT SIGNALS TO READ REVISION INFORMATION FROM AN ADAPTER BOARD THAT INTERFACES A DISK DRIVE | EMC Corporation |
| 10320212 | 6829658 | COMPATIBLE SIGNAL-TO-PIN CONNECTOR ASSIGNMENTS FOR USAGE WITH FIBRE CHANNEL AND ADVANCED TECHNOLOGY ATTACHMENT DISK DRIVES | EMC Corporation |
| 10327338 | 7194673 | DETECTING INTERMITTENT LOSSES OF SYNCHRONIZATION IN A FIBRE CHANNEL LOOP | EMC Corporation |
| 10327483 | 7127621 | PEER POWER CONTROL | EMC Corporation |
| 10330806 | 7127638 | METHOD AND APPARATUS FOR PRESERVING DATA IN A HIGH-AVAILABILITY SYSTEM | EMC Corporation |
| 10331366 | 6973551 | DATA STORAGE SYSTEM HAVING ATOMIC MEMORY OPERATION | EMC Corporation |
| 10331423 | 7062620 | DUAL POWER BUS DATA STORAGE SYSTEM | EMC Corporation |
| 10333426 | 7949840 | METHOD FOR SAVING COMPUTER DATA | EMC Corporation |
| 10334964 | 7472182 | DATA COLLECTION POLICY FOR STORAGE DEVICES | EMC Corporation |
| 10335329 | 6804627 | SYSTEM AND METHOD FOR GATHERING AND ANALYZING DATABASE PERFORMANCE STATISTICS | EMC Corporation |
| 10335330 | 7315985 | METHODS AND APPARATUS FOR MANAGING NETWORK RESOURCES USING A NETWORK TOPOLOGY VIEW | EMC Corporation |
| 10335349 | 7587713 | SYSTEM AND METHOD FOR CONTROLLING INSTALLATION OF ONE OR MORE COMPONENTS FOR A DATA STORAGE MANAGEMENT SYSTEM | EMC Corporation |
| 10335497 | 7197489 | METHODS AND APPARATUS FOR MAINTAINING OBJECT DATA FOR COMPONENTS IN A NETWORK | EMC Corporation |

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| 10335509 | 7587715 | SYSTEM AND METHOD FOR SELECTIVE INSTALLATION OF ONE OR MORE COMPONENTS FOR A DATA STORAGE MANAGEMENT SYSTEM | EMC Corporation |
| 10335546 | 7454487 | METHODS AND APPARATUS PROVIDING AN EXTENSIBLE MANAGEABLE ENTITY MODEL FOR A NETWORK | EMC Corporation |
| 10335591 | 7401298 | STREAMING ALGORITHM THAT POPULATES USER INFORMATION FROM DATABASE BASED ON SCROLLING ACTIVITY | EMC Corporation |
| 10335601 | 7228306 | POPULATION OF DISCOVERY DATA | EMC Corporation |
| 10335603 | 7469290 | AUTOMATIC SYSTEM RESOURCE MANAGEMENT | EMC Corporation |
| 10335643 | 6769054 | SYSTEM AND METHOD FOR PREPARATION OF WORKLOAD DATA FOR REPLAYING IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10343893 | 7660954 | TECHNIQUES FOR SAVING DATA | EMC Corporation |
| 10353322 | 7707151 | METHOD AND APPARATUS FOR MIGRATING DATA | EMC Corporation |
| 10359864 | 7246246 | SYSTEM FOR KEYING PROTECTED ELECTRONIC DATA TO PARTICULAR MEDIA TO PREVENT UNAUTHORIZED COPY USING A COMPOUND | EMC Corporation |
| 10368720 | 6938059 | SYSTEM FOR DETERMINING MAPPING OF LOGICAL OBJECTS IN A COMPUTER SYSTEM | EMC Corporation |
| 10374694 | 6931502 | RECOVERY OF DATA USING WRITE REQUEST COPIES IN DELTA QUEUE | EMC Corporation |
| 10375991 | 7216336 | SEQUENTIAL EVENT MONITORING MODULE | EMC Corporation |
| 10376855 | 6993530 | METHOD AND APPARATUS FOR OBTAINING AN IDENTIFIER FOR A LOGICAL UNIT OF DATA IN A DATABASE | EMC Corporation |
| | | | |
| 10382662 | 6987631 | DATA READ/WRITE METHOD AND APPARATUS | EMC Corporation |
| 10392626 | 7383492 | FIRST-IN/FIRST-OUT (FIFO) INFORMATION PROTECTION AND ERROR DETECTION METHOD AND APPARATUS | EMC Corporation |
| 10396033 | 7254752 | PROTECTING DATABASE RECORDS AGAINST A FAILED WRITE OPERATION | EMC Corporation |
| 10396786 | 6898685 | ORDERING DATA WRITES FROM A LOCAL STORAGE DEVICE TO A REMOTE STORAGE DEVICE | EMC Corporation |
| 10396800 | 7113945 | VIRTUAL STORAGE DEVICE THAT USES VOLATILE MEMORY | EMC Corporation |
| 10397403 | 6904470 | DEVICE SELECTION BY A DISK ADAPTER SCHEDULER | EMC Corporation |
| 10400208 | 6718437 | METHOD AND APPARATUS FOR RECONFIGURING STRIPED LOGICAL DEVICES IN A DISK ARRAY STORAGE | EMC Corporation |
| 10400333 | 6850410 | ADVANCED TECHNOLOGY ATTACHMENT DISK DRIVE MODULE WITH FIBRE CHANNEL SYSTEM CHARACTERISTICS | EMC Corporation |
| 10400718 | 6868367 | APPARATUS AND METHOD FOR EVENT CORRELATION AND PROBLEM REPORTING | EMC Corporation |
| 10401523 | 7068500 | MULTI-DRIVE HOT PLUG DRIVE CARRIER | EMC Corporation |
| 10402009 | 7818447 | END-TO-END BROADCAST BASED FLOW CONTROL IN A SWITCH FABRIC | EMC Corporation |

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| 10402334 | 7216188 | TECHNIQUES FOR ACCESSING DEVICES THROUGH A SET OF SERIAL BUSES AUTOMATICALLY SETTING UNIQUE ENCLOSURE ADDRESSES AND DETECTING NON-UNIQUE ENCLOSURE ADDRESSES UPON INITIALIZATION | EMC Corporation |
| 10402363 | 7216195 | ARCHITECTURE FOR MANAGING DISK DRIVES | EMC Corporation |
| 10402514 | 7252100 | SYSTEMS AND METHODS FOR PROCESSING A SET OF CIRCUIT BOARDS | EMC Corporation |
| 10402594 | 7516272 | MIDPLANE-INDEPENDENT IMPLEMENTATIONS OF DATA STORAGE SYSTEM ENCLOSURES | EMC Corporation |
| 10402883 | 6955410 | TECHNIQUES FOR INTERCONNECTING ELECTRONIC CABINET FRAMES | EMC Corporation |
| 10403262 | 7143306 | DATA STORAGE SYSTEM | EMC Corporation |
| 10403263 | 6981111 | DATA STORAGE SYSTEM | EMC Corporation |
| 10403473 | 7249184 | ARCHITECTURE FOR DETERMINING A WORLD WIDE NAME FOR USE WITH A HOST FOR ENABLING COMMUNICATION WITH A DATA STORAGE SYSTEM WITHOUT REQUIRING THAT THE HOST AND DATA STORAGE SYSTEM BE IN COMMUNICATION DURING THE DETERMINATION | EMC Corporation |
| 10403748 | 7440949 | SYSTEM AND METHOD FOR CONFIGURING A HOST FOR OPERATIONALLY COOPERATING WITH DATA STORAGE SYSTEM | EMC Corporation |
| 10408383 | 6883072 | MEMORY SYSTEM AND METHOD OF USING SAME | EMC Corporation |
| 10411500 | 6760823 | FILE MAPPING SYSTEM AND RELATED TECHNIQUES | EMC Corporation |
| 10421239 | 7415591 | METHOD AND APPARATUS FOR MIGRATING DATA AND AUTOMATICALLY PROVISIONING A TARGET FOR THE MIGRATION | EMC Corporation |
| 10421252 | 7093088 | METHOD AND APPARATUS FOR UNDOING A DATA MIGRATION IN A COMPUTER SYSTEM | EMC Corporation |
| 10421401 | 7080221 | METHOD AND APPARATUS FOR MANAGING MIGRATION OF DATA IN A CLUSTERED COMPUTER SYSTEM ENVIRONMENT | EMC Corporation |
| 10421478 | 7263590 | METHOD AND APPARATUS FOR MIGRATING DATA IN A COMPUTER SYSTEM | EMC Corporation |
| 10421500 | 7805583 | METHOD AND APPARATUS FOR MIGRATING DATA IN A CLUSTERED COMPUTER SYSTEM ENVIRONMENT | EMC Corporation |
| 10435322 | 7100049 | METHOD AND APPARATUS FOR AUTHENTICATION OF USERS AND WEB SITES | EMC Corporation |
| 10442805 | 7022916 | TECHNIQUES FOR CONTROLLING MOVEMENT OF A SET OF CABLES | EMC Corporation |
| 10447923 | 7587656 | METHOD AND APPARATUS FOR DETECTING AND CORRECTING ERRORS IN STORAGE INFORMATION | EMC Corporation |
| 10452688 | 7194492 | METHOD AND APPARATUS FOR EFFICIENTLY COPYING DISTRIBUTED DATA FILES | EMC Corporation |
| 10462949 | 7136969 | USING THE MESSAGE FABRIC TO MAINTAIN CACHE COHERENCY OF LOCAL CACHES OF GLOBAL MEMORY | EMC Corporation |
| 10463247 | 7047366 | QOS FEATURE KNOBS | EMC Corporation |

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| 10463649 | 7254595 | METHOD AND APPARATUS FOR STORAGE AND RETRIEVAL OF VERY LARGE DATABASES USING A DIRECT PIPE | EMC Corporation |
| 10468181 | 8442957 | EFFICIENT MANAGEMENT OF LARGE FILES | EMC Corporation |
| 10468184 | 7500246 | SHARING OBJECTS BETWEEN COMPUTER SYSTEMS | EMC Corporation |
| 10468185 | 8484172 | EFFICIENT SEARCH FOR MIGRATION AND PURGE CANDIDATES | EMC Corporation |
| 10469951 | 7499889 | TRANSACTION SYSTEM | EMC Corporation |
| 10549542 | 7979707 | SECURE SEED GENERATION PROTOCOL | EMC Corporation |
| 10578591 | 9076132 | SYSTEM AND METHOD OF ADDRESSING EMAIL AND ELECTRONIC COMMUNICATION FRAUD | EMC Corporation |
| 10600133 | 6986009 | INTERCEPTING CONTROL OF A HOST I/O PROCESS | EMC Corporation |
| 10601359 | 7099875 | METHOD AND APPARATUS FOR MAKING INDEPENDENT DATA COPIES IN A DATA PROCESSING SYSTEM | EMC Corporation |
| 10603411 | 7567991 | REPLICATION OF SNAPSHOT USING A FILE SYSTEM COPY DIFFERENTIAL | EMC Corporation |
| 10603951 | 7275177 | DATA RECOVERY WITH INTERNET PROTOCOL REPLICATION WITH OR WITHOUT FULL RESYNC | EMC Corporation |
| 10606483 | 6971805 | TECHNIQUES FOR PROVIDING MULTIPLE COMMUNICATIONS PATHWAYS | EMC Corporation |
| 10606617 | 6870093 | ADAPTABLE EMI/RFI SHIELDING FOR A FRONT-PANEL ATTACHMENT TO AN ENCLOSURE | EMC Corporation |
| 10606699 | 7380082 | READING VIRTUAL ORDERED WRITES AT LOCAL STORAGE DEVICE | EMC Corporation |
| 10606819 | 7099971 | ARBITRATION SYSTEM | EMC Corporation |
| 10606872 | 7272668 | SYSTEM HAVING BACKPLANE PERFORMANCE CAPABILITY SELECTION LOGIC | EMC Corporation |
| 10607041 | 7051176 | READING VIRTUAL ORDERED WRITES AT A REMOTE STORAGE DEVICE | EMC Corporation |
| 10607400 | 7159758 | CIRCUIT BOARD PROCESSING TECHNIQUES USING SOLDER FUSING | EMC Corporation |
| 10607653 | 7146439 | MANAGEMENT OF BACKGROUND COPY TASK FOR POINT-IN-TIME COPIES | EMC Corporation |
| 10608608 | 7275098 | METHODS AND APPARATUS FOR ADMINISTERING SOFTWARE MODULES IN A STORAGE AREA NETWORK MANAGEMENT APPLICATION | EMC Corporation |
| 10608618 | 6934152 | SYSTEMS AND METHODS FOR CONNECTING AN ELECTRONIC APPARATUS TO A BACKPLANE | EMC Corporation |
| 10608635 | 7154723 | HIGHLY AVAILABLE DUAL SERIAL BUS ARCHITECTURE | EMC Corporation |
| 10608745 | 6924986 | INVERTIBLE, PLUGGABLE MODULE FOR VARIABLE I/O DENSITIES | EMC Corporation |
| 10608757 | 7827136 | MANAGEMENT FOR REPLICATION OF DATA STORED IN A DATA STORAGE ENVIRONMENT INCLUDING A SYSTEM AND METHOD FOR FAILOVER PROTECTION OF SOFTWARE AGENTS OPERATING IN THE ENVIRONMENT | EMC Corporation |
| 10611237 | 7424498 | PROBABILISTIC SUMMARY DATA STRUCTURE BASED ENCODING FOR GARBAGE COLLECTION | EMC Corporation |
| 10611291 | 7451168 | INCREMENTAL GARBAGE COLLECTION OF DATA IN SECONDARY STORAGE | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 10611309 | 7143251 | DATA STORAGE USING IDENTIFIERS | EMC Corporation |
| 10611312 | 7318071 | SYSTEM AND METHOD FOR TRANSFERRING DATA FROM A SOURCE MACHINE TO A TARGET MACHINE | EMC Corporation |
| 10613114 | 7103797 | RESOURCE ALLOCATION THROTTLING IN REMOTE DATA MIRRORING SYSTEM | EMC Corporation |
| 10614630 | 7627779 | MULTIPLE HIERARCHAL/PEER DOMAIN FILE SERVER WITH DOMAIN BASED, CROSS DOMAIN COOPERATIVE FAULT HANDLING MECHANISMS | EMC Corporation |
| 10619886 | 7603481 | DYNAMIC ROUTING THROUGH A CONTENT DISTRIBUTION NETWORK | EMC Corporation |
| 10623103 | 7281111 | METHODS AND APPARATUS FOR INTERFACING TO A DATA STORAGE SYSTEM | EMC Corporation |
| 10623234 | 7484049 | DATA STORAGE SYSTEM PACKER/DEPACKER | EMC Corporation |
| 10631989 | 7730518 | METHOD AND APPARATUS FOR GRAPH-BASED PARTITION OF CRYPTOGRAPHIC FUNCTIONALITY | EMC Corporation |
| 10641467 | 7107418 | METHOD AND SYSTEM FOR MIRRORING AND ARCHIVING MASS STORAGE | EMC Corporation |
| 10642912 | 7266719 | HOST SYSTEM FOR MASS STORAGE BUSINESS CONTINUANCE VOLUMES | EMC Corporation |
| 10645976 | 7412496 | MANAGEMENT OF THE FILE-MODIFICATION TIME ATTRIBUTE IN A MULTI-PROCESSOR FILE SERVER SYSTEM | EMC Corporation |
| 10646851 | 7953819 | MULTI-PROTOCOL SHARABLE VIRTUAL STORAGE OBJECTS MANAGEMENT AND CONTROL | EMC Corporation |
| 10652371 | 7702670 | SYSTEM AND METHOD FOR TRACKING CHANGES ASSOCIATED WITH INCREMENTAL COPYING | EMC Corporation |
| 10652967 | 7165155 | SYSTEM AND METHOD FOR TRACKING CHANGES ASSOCIATED WITH INCREMENTAL COPYING | EMC Corporation |
| 10654137 | 7849112 | USING A FILE HANDLE FOR ASSOCIATING THE FILE WITH A TREE QUOTA IN A FILE SERVER | EMC Corporation |
| 10654852 | 7149947 | METHOD OF AND SYSTEM FOR VALIDATING AN ERROR CORRECTION CODE AND PARITY INFORMATION ASSOCIATED WITH A DATA WORD | EMC Corporation |
| 10655693 | 7051182 | MAPPING OF HOSTS TO LOGICAL STORAGE UNITS AND DATA STORAGE PORTS IN A DATA PROCESSING SYSTEM | EMC Corporation |
| 10658695 | 6987673 | TECHNIQUES FOR COOLING A SET OF CIRCUIT BOARDS WITHIN A RACK MOUNT CABINET | EMC Corporation |
| 10662082 | 7921080 | SYSTEM AND METHOD FOR BACKUP A PARALLEL SERVER DATA STORAGE SYSTEM | EMC Corporation |
| 10666773 | 7343432 | MESSAGE-BASED GLOBAL DISTRIBUTION LOCKS WITH AUTOMATIC EXPIRATION FOR INDICATING THAT SAID LOCKS IS EXPIRED | EMC Corporation |
| 10667170 | 7363431 | MESSAGE-BASED DISTRIBUTED SYNCHRONIZATION IN A STORAGE SYSTEM | EMC Corporation |
| 10667564 | 7089357 | LOCALLY BUFFERED CACHE EXTENSIONS HAVING ASSOCIATED CONTROL PARAMETERS TO DETERMINE USE FOR CACHE ALLOCATION OR SUBSEQUENT REQUESTS | EMC Corporation |

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|---|---|---|---|
| 10668467 | 7865485 | MULTI-THREADED WRITE INTERFACE AND METHODS FOR INCREASING THE SINGLE FILE READ AND WRITE THROUGHPUT OF A FILE SERVER | EMC Corporation |
| 10668546 | 7555504 | MAINTENANCE OF A FILE VERSION SET INCLUDING READ-ONLY AND READ-WRITE SNAPSHOT COPIES OF A PRODUCTION FILE | EMC Corporation |
| 10668783 | 7035881 | ORGANIZATION OF READ-WRITE SNAPSHOT COPIES IN A DATA STORAGE SYSTEM | EMC Corporation |
| 10673305 | 7188202 | TECHNIQUES FOR ACCESSING DEVICES THROUGH A SET OF SERIAL BUSES | EMC Corporation |
| 10673356 | 7503076 | ACCESS TO CONTENT ADDRESSABLE DATA OVER A NETWORK | EMC Corporation |
| 10673540 | 6970070 | METHOD AND APPARATUS FOR SELECTIVE BLOCKING OF RADIO FREQUENCY IDENTIFICATION DEVICES | EMC Corporation |
| 10673664 | 7447860 | SYSTEM AND METHOD FOR MANAGING DATA ASSOCIATED WITH COPYING AND RECOVERY PROCEDURES IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10673722 | 7096331 | SYSTEM AND METHOD FOR MANAGING DATA ASSOCIATED WITH COPYING AND REPLICATION PROCEDURES IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10673829 | 7102893 | METHODS AND APPARATUS FOR FORMING A COHESIVE BACKPLANE INTERCONNECT SYSTEM | EMC Corporation |
| 10673836 | 7346805 | PROTECTION OF MIRRORED DATA | EMC Corporation |
| 10673853 | 7257653 | SWITCHING BETWEEN COPY MODE AND SYNCHRONOUS RDF MODE | EMC Corporation |
| 10673864 | 7133985 | SYSTEM AND METHOD FOR MANAGING DATA ASSOCIATED WITH COPYING AND REPLICATION PROCEDURES IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10674080 | 7416106 | TECHNIQUES FOR CREATING OPTIMIZED PAD GEOMETRIES FOR SOLDERING | EMC Corporation |
| 10674321 | 7340747 | SYSTEM AND METHODS FOR DEPLOYING AND INVOKING A DISTRIBUTED OBJECT MODEL | EMC Corporation |
| 10674322 | 7603458 | SYSTEM AND METHODS FOR PROCESSING AND DISPLAYING AGGREGATE STATUS EVENTS FOR REMOTE NODES | EMC Corporation |
| 10675002 | 7712004 | METHOD OF AND SYSTEM FOR ERROR CHECKING IN A DATA STORAGE SYSTEM | EMC Corporation |
| 10675016 | 7281236 | SYSTEM AND METHODS FOR DEVELOPING AND DEPLOYING A REMOTE DOMAIN SYSTEM | EMC Corporation |
| 10675039 | 7124245 | DATA STORAGE SYSTEM HAVING CACHE MEMORY MANAGER WITH PACKET SWITCHING NETWORK | EMC Corporation |
| 10675040 | 7437425 | DATA STORAGE SYSTEM HAVING SHARED RESOURCE | EMC Corporation |
| 10675041 | 7073024 | DATA PROTECTION METHOD WHEREIN DATA PROTECTION CODE IS STORED TOGETHER WITH PARITY | EMC Corporation |

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| 10675058 | 7136959 | DATA STORAGE SYSTEM HAVING CROSSBAR PACKET SWITCHING NETWORK | EMC Corporation |
| 10675164 | 7158976 | SPATIAL DOMAIN MECHANISM | EMC Corporation |
| 10675166 | 7454536 | DATA SYSTEM HAVING A VIRTUAL QUEUE | EMC Corporation |
| 10675205 | 7233957 | METHOD AND APPARATUS FOR IDENTIFYING AND PROCESSING CHANGES TO MANAGEMENT INFORMATION | EMC Corporation |
| 10675218 | 7555719 | METHODS AND APPARATUS FOR DISPLAYING DATA STORAGE MANAGEMENT INFORMATION | EMC Corporation |
| 10675220 | 7600229 | METHODS AND APPARATUS FOR LOAD BALANCING PROCESSING OF MANAGEMENT INFORMATION | EMC Corporation |
| 10675281 | 7444355 | SYSTEM AND METHOD FOR ASSIGNING MANAGEMENT RESPONSIBILITY FOR MANAGEABLE ENTITIES | EMC Corporation |
| 10675423 | 7234073 | SYSTEM AND METHODS FOR FAILOVER MANAGEMENT OF MANAGEABLE ENTITY AGENTS | EMC Corporation |
| 10675561 | 7159139 | DIGITAL DATA STORAGE SUBSYSTEM INCLUDING DIRECTORY FOR EFFICIENTLY PROVIDING FORMATTING INFORMATION FOR STOPPED RECORDS AND UTILIZATION OF A CHECK VALUE FOR VERIFYING THAT A RECORD IS FROM A PARTICULAR STORAGE LOCATION | EMC Corporation |
| 10675586 | 7437676 | METHODS AND APPARATUS FOR MANAGING NETWORK RESOURCES VIA USE OF A RELATIONSHIP VIEW | EMC Corporation |
| 10676138 | 7770204 | TECHNIQUES FOR SECURING ELECTRONIC IDENTITIES | EMC Corporation |
| 10676831 | 7325097 | METHOD AND APPARATUS FOR DISTRIBUTING A LOGICAL VOLUME OF STORAGE FOR SHARED ACCESS BY MULTIPLE HOST COMPUTERS | EMC Corporation |
| 10676833 | 7124249 | METHOD AND APPARATUS FOR IMPLEMENTING A SOFTWARE CACHE | EMC Corporation |
| 10679662 | 7188223 | SYSTEM AND METHOD FOR MANAGING DATA ASSOCIATED WITH COPYING AND RECOVERY PROCEDURES IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10679726 | 7353351 | SYSTEM AND METHOD FOR MANAGING DATA ASSOCIATED WITH COPYING AND RECOVERY PROCEDURES IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10688180 | 6839773 | DATA PROCESSING SYSTEM WITH PARALLEL ACCESS TO A LOGICAL VOLUME ON A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| 10692120 | 6990536 | METHOD FOR ENABLING OVERLAPPED INPUT/OUTPUT REQUESTS TO A LOGICAL DEVICE FROM MULTIPLE HOSTS WITH EXPLICIT ALLEGIANCES | EMC Corporation |
| 10692285 | 7516168 | METHOD AND APPARATUS FOR MONITORING UPDATE ACTIVITY IN A DATA STORAGE FACILITY | EMC Corporation |
| 10692641 | 7016150 | METHOD AND APPARATUS FOR CLEANING HEAD WITH OVER-DAMPED HARMONIC OSCILLATION | EMC Corporation |

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| 10699572 | 7640496 | METHOD AND APPARATUS FOR GENERATING REPORT VIEWS | EMC Corporation |
| 10701167 | 7395497 | SYSTEM AND METHODS FOR PROCESSING LARGE DATASETS | EMC Corporation |
| 10702259 | 8527541 | METHOD FOR MAPPING A FLAT NAMESPACE ONTO A HIERARCHICAL NAMESPACE USING LOCALITY OF REFERENCE CUES | EMC Corporation |
| 10703754 | 6980384 | EXTENDED POSITION ERROR SIGNAL FOR ANALOGUE SERVO DISK DRIVE | EMC Corporation |
| 10705772 | 7395283 | METHOD AND APPARATUS FOR MAKING INDEPENDENT DATA COPIES IN A DATA PROCESSING SYSTEM | EMC Corporation |
| 10714039 | 7092202 | ENHANCED AIRFLOW CONDITIONING SYSTEM FOR REMOVABLE DATA STORAGE CARTRIDGE | EMC Corporation |
| 10714326 | 7937421 | SYSTEMS AND METHODS FOR RESTRIPING FILES IN A DISTRIBUTED FILE SYSTEM | EMC Corporation |
| 10718341 | 7230781 | INFORMATION STORAGE SYSTEM AND A METHOD OF OPERATING IT | EMC Corporation |
| 10720629 | 7085781 | MULTI-VOLUME EXTENT BASED FILE SYSTEM | EMC Corporation |
| 10720969 | 7428558 | PERSISTENT RESTORE OF VIRTUAL DEVICES | EMC Corporation |
| 10722146 | 7962914 | METHOD AND APPARATUS FOR LOAD BALANCING OF DISTRIBUTED PROCESSING UNITS BASED ON PERFORMANCE METRICS | EMC Corporation |
| 10724034 | 7502933 | IDENTITY AUTHENTICATION SYSTEM AND METHOD | EMC Corporation |
| 10724269 | 7447875 | METHOD AND SYSTEM FOR MANAGEMENT OF GLOBAL QUEUES UTILIZING A LOCKED STATE | EMC Corporation |
| 10724669 | 7054883 | VIRTUAL ORDERED WRITES FOR MULTIPLE STORAGE DEVICES | EMC Corporation |
| 10724670 | 7228456 | DATA RECOVERY FOR VIRTUAL ORDERED WRITES FOR MULTIPLE STORAGE DEVICES | EMC Corporation |
| 10727386 | 7153723 | METHOD OF FORMING A BALL GRID ARRAY DEVICE | EMC Corporation |
| 10728262 | 6972607 | CLOCK SIGNAL REGENERATION CIRCUITRY | EMC Corporation |
| 10731603 | 7162571 | METHODS AND APPARATUS FOR PARSING A CONTENT ADDRESS TO FACILITATE SELECTION OF A PHYSICAL STORAGE LOCATION IN A DATA STORAGE SYSTEM | EMC Corporation |
| 10731613 | 7263576 | METHODS AND APPARATUS FOR FACILITATING ACCESS TO CONTENT IN A DATA STORAGE SYSTEM | EMC Corporation |
| 10731622 | 7502886 | DATA STORAGE DEVICE WITH TWO-TIER RAID CONTROL CIRCUITRY | EMC Corporation |
| 10731790 | 9075851 | METHOD AND APPARATUS FOR DATA RETENTION IN A STORAGE SYSTEM | EMC Corporation |
| 10731796 | 7159070 | METHODS AND APPARATUS FOR CACHING A LOCATION INDEX IN A DATA STORAGE SYSTEM | EMC Corporation |
| 10731845 | 7444389 | METHODS AND APPARATUS FOR GENERATING A CONTENT ADDRESS TO INDICATE DATA UNITS WRITTEN TO A STORAGE SYSTEM PROXIMATE IN TIME | EMC Corporation |
| 10735238 | 7039737 | METHOD AND APPARATUS FOR RESOURCE ARBITRATION | EMC Corporation |

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| 10735422 | 7171428 | TESTING SYSTEM WITH DATABASE-GENERIC FRONT END | EMC Corporation |
| 10735432 | 8176156 | SERVER IDENTIFICATION ASSIGNMENT IN A DISTRIBUTED SWITCHED STORAGE ENVIRONMENT | EMC Corporation |
| 10736954 | 7454349 | VIRTUAL VOICEPRINT SYSTEM AND METHOD FOR GENERATING VOICEPRINTS | EMC Corporation |
| 10737170 | 7131025 | RESOURCE ALLOCATION AWARE QUEUING OF REQUESTS FOR MEDIA RESOURCES | EMC Corporation |
| 10737305 | 7174406 | SYSTEM AND METHOD FOR ARBITRATING ACCESS TO A SHARED RESOURCE | EMC Corporation |
| 10737317 | 6862200 | METHOD AND APPARATUS FOR PROVIDING POWER SIGNALS TO OPERATING CIRCUITRY MOUNTED ON CIRCUIT BOARDS | EMC Corporation |
| 10737505 | 7404087 | SYSTEM AND METHOD FOR PROVIDING IMPROVED CLAIMANT AUTHENTICATION | EMC Corporation |
| 10739504 | 7123446 | REMOVABLE CARTRIDGE RECORDING DEVICE INCORPORATING ANTIFERROMAGNETICALLY COUPLED RIGID MAGNETIC MEDIA | EMC Corporation |
| 10740219 | 7231492 | DATA STORAGE SYSTEM | EMC Corporation |
| 10740220 | 7099980 | DATA STORAGE SYSTEM HAVING PORT DISABLE MECHANISM | EMC Corporation |
| 10740343 | 7073031 | MULTI-PROCESSOR SYSTEM HAVING DATA COHERENCY | EMC Corporation |
| 10740990 | 7457118 | METHOD AND APPARATUS FOR DISPERSING HEAT FROM HIGH-POWER ELECTRONIC DEVICES | EMC Corporation |
| 10741829 | 7275141 | SYSTEM AND METHOD FOR PERFORMING A FULL COPY IN A DATA STORAGE ENVIRONMENT HAVING A CAPABILITY FOR PERFORMING AN INCREMENTAL COPY | EMC Corporation |
| 10742668 | 7072995 | METHODS AND APPARATUS FOR INDICATING WHETHER A DEVICE IS CONNECTED TO A SERIAL ATA COMMUNICATIONS CABLE | EMC Corporation |
| 10744536 | 7206795 | PREFETCHING AND MULTITHREADING FOR IMPROVED FILE READ PERFORMANCE | EMC Corporation |
| 10745100 | 7145776 | MIDPLANE-LESS DATA STORAGE ENCLOSURE | EMC Corporation |
| 10745431 | 8244903 | DATA STREAMING AND BACKUP SYSTEMS HAVING MULTIPLE CONCURRENT READ THREADS FOR IMPROVED SMALL FILE PERFORMANCE | EMC Corporation |
| 10745732 | 7111158 | TECHNIQUES FOR TRANSITIONING CONTROL OF A SERIAL ATA DEVICE AMONG MULTIPLE HOSTS USING SLEEP AND WAKE COMMANDS | EMC Corporation |
| 10746317 | 7590776 | DATA STORAGE TECHNIQUES UTILIZING HOST-SIDE MULTIPLEXERS | EMC Corporation |
| 10748008 | 8544096 | ON-ACCESS AND ON-DEMAND DISTRIBUTED VIRUS SCANNING | EMC Corporation |
| 10748753 | 7155586 | METHOD OF ALLOWING POINT-IN-TIME VIEW OF DATA ON A DISK USING A MAP ON CACHE DISK | EMC Corporation |
| 10749114 | 7457868 | METHODS AND APPARATUS FOR MEASURING NETWORK PERFORMANCE | EMC Corporation |
| 10749692 | 7627619 | DATA VERIFICATION FOLLOWING DATABASE WRITE | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 10750227 | 7559065 | METHODS AND APPARATUS PROVIDING AN EVENT SERVICE INFRASTRUCTURE | EMC Corporation |
| 10750334 | 7590714 | METHODS AND APPARATUS FOR PROVIDING EXTENSIBLE LIGHTWEIGHT SERVICES IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10750336 | 7401137 | METHODS AND APPARATUS FOR APPLICATION OF MANAGEMENT ACTIONS TO RESOURCES SHARING RELATIONSHIPS | EMC Corporation |
| 10750413 | 7552446 | METHODS AND APPARATUS FOR A TIMER EVENT SERVICE INFRASTRUCTURE | EMC Corporation |
| 10752256 | 7313578 | METHOD AND APPARATUS FOR CASCADING DATA THROUGH REDUNDANT DATA STORAGE UNITS | EMC Corporation |
| 10758327 | 7546367 | METHODS AND SYSTEMS FOR MANAGING NETWORK TRAFFIC BY MULTIPLE CONSTRAINTS | EMC Corporation |
| 10761767 | 7639713 | DATABASE BLOCK NETWORK ATTACHED STORAGE PACKET JOINING | EMC Corporation |
| 10761826 | 7430645 | METHODS AND APPARATUS FOR EXTENDING A RETENTION PERIOD FOR DATA IN A STORAGE SYSTEM | EMC Corporation |
| 10762036 | 7801920 | METHODS AND APPARATUS FOR INDIRECTLY IDENTIFYING A RETENTION PERIOD FOR DATA IN A STORAGE SYSTEM | EMC Corporation |
| 10762043 | 7249251 | METHODS AND APPARATUS FOR SECURE MODIFICATION OF A RETENTION PERIOD FOR DATA IN A STORAGE SYSTEM | EMC Corporation |
| 10762044 | 7580961 | METHODS AND APPARATUS FOR MODIFYING A RETENTION PERIOD FOR DATA IN A STORAGE SYSTEM | EMC Corporation |
| 10767884 | 7647256 | TECHNIQUES FOR ESTABLISHING AND MANAGING A DISTRIBUTED CREDENTIAL STORE | EMC Corporation |
| 10769943 | 7555569 | QUICK CONFIGURATION STATUS | EMC Corporation |
| 10771591 | 7383463 | INTERNET PROTOCOL BASED DISASTER RECOVERY OF A SERVER | EMC Corporation |
| 10771811 | 7380043 | METHOD AND APPARATUS FOR ARBITRATING FOR SERIAL BUS ACCESS | EMC Corporation |
| 10779355 | 7574418 | METHOD AND APPARATUS FOR STORING COMPOSITE DATA STREAMS | EMC Corporation |
| 10782309 | 7532104 | LOW-COMPLEXITY CRYPTOGRAPHIC TECHNIQUES FOR USE WITH RADIO FREQUENCY IDENTIFICATION DEVICES | EMC Corporation |
| 10785614 | 7281157 | METHOD AND APPARATUS FOR ENABLING CONSISTENT ANCILLARY DISK ARRAY STORAGE DEVICE OPERATIONS WITH RESPECT TO A MAIN APPLICATION | EMC Corporation |
| 10786644 | 7640342 | SYSTEM AND METHOD FOR DETERMINING CONFIGURATION OF ONE OR MORE DATA STORAGE SYSTEMS | EMC Corporation |
| 10787337 | 9229646 | METHODS AND APPARATUS FOR INCREASING DATA STORAGE CAPACITY | EMC Corporation |
| 10795682 | 7505972 | METHOD AND SYSTEM FOR DYNAMIC ASSIGNMENT OF ENTITLEMENTS | EMC Corporation |

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|---|---|---|---|
| 10795686 | 7228396 | SWITCHING BETWEEN VIRTUAL ORDERED WRITES MODE OR SYNCHRONOUS OR SEMI-SYNCHRONOUS RDF TRANSFER MODE AND SYNCHRONOUS OR SEMI-SYNCHRONOUS RDF TRANSFER MODE | EMC Corporation |
| 10795851 | 7240131 | METHOD AND APPARATUS FOR IMPROVING THE PROCESS OF MAKING INDEPENDENT DATA COPIES IN A DATA PROCESSING SYSTEM | EMC Corporation |
| 10802489 | 7318134 | CONTINUOUS DATA BACKUP USING DISTRIBUTED JOURNALING | EMC Corporation |
| 10802584 | 7281156 | SYSTEM AND METHOD FOR WRITING DATA TO A DISK DRIVE ASSEMBLY TO MINIMIZE THE EFFECT OF A SINGLE HEAD FAILURE | EMC Corporation |
| 10803377 | 7178000 | TRACE BUFFER FOR DDR MEMORIES | EMC Corporation |
| 10805852 | 7234009 | USE OF AN OPTICAL INTERFACE FOR REMOVABLE MAGNETIC MEDIA | EMC Corporation |
| 10807945 | 7321972 | ISOLATING MULTIPLE AUTHENTICATION CHANNELS, EACH USING MULTIPLE AUTHENTICATION MODELS | EMC Corporation |
| 10808781 | 7599951 | CONTINUOUS DATA BACKUP | EMC Corporation |
| 10808839 | 7293198 | TECHNIQUES FOR MAINTAINING OPERATION OF A DATA STORAGE SYSTEM DURING A FAILURE | EMC Corporation |
| 10809732 | 7016240 | NON-DESTRUCTIVE MEMORY READ STROBE PULSE OPTIMIZATION TRAINING SYSTEM | EMC Corporation |
| 10809733 | 7107424 | MEMORY READ STROBE PULSE OPTIMIZATION TRAINING SYSTEM | EMC Corporation |
| 10809959 | 7216264 | SYSTEM AND METHOD FOR MANAGING STORAGE NETWORKS AND FOR HANDLING ERRORS IN SUCH A NETWORK | EMC Corporation |
| 10810431 | 7281150 | METHODS AND APPARATUS FOR CONTROLLING OPERATION OF A DATA STORAGE SYSTEM | EMC Corporation |
| 10810530 | 7162666 | MULTI-PROCESSOR SYSTEM HAVING A WATCHDOG FOR INTERRUPTING THE MULTIPLE PROCESSORS AND DEFERRING PREEMPTION UNTIL RELEASE OF SPINLOCKS | EMC Corporation |
| 10810971 | 7225317 | SYSTEM AND METHOD FOR MANAGING STORAGE NETWORKS AND FOR MANAGING SCALABILITY OF VOLUMES IN SUCH A NETWORK | EMC Corporation |
| 10810988 | 7206863 | SYSTEM AND METHOD FOR MANAGING STORAGE NETWORKS AND PROVIDING VIRTUALIZATION OF RESOURCES IN SUCH A NETWORK | EMC Corporation |
| 10811566 | 7302526 | HANDLING MEMORY FAULTS FOR MIRRORED MEMORY | EMC Corporation |
| 10812262 | 7350884 | TRAY WITH INTEGRATED RAIL GUIDES FOR FACILITATING INSTALLATION OF EQUIPMENT UNITS INTO A CABINET RACK | EMC Corporation |
| 10812263 | 7188916 | ADJUSTABLE SIDE RAILS AND METHOD OF ATTACHING SAME TO MOUNTING RAILS OF CABINET RACKS | EMC Corporation |
| 10812291 | 7472221 | MIRRORED MEMORY | EMC Corporation |
| 10812429 | 7477502 | METHOD AND SYSTEM FOR PROVIDING FAULT PROTECTION IN A POWER SUPPLY SYSTEM | EMC Corporation |

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| 10812442 | 7372693 | DATA STORAGE SYSTEM WITH IMPROVED POWER SUPPLY INSTALLATION MECHANISM | EMC Corporation |
| 10812456 | 7278003 | DATA STORAGE SYSTEM HAVING ACCURATE AND COHERENT TIME INFORMATION | EMC Corporation |
| 10812458 | 6992507 | METHOD FOR SELECTING OPTIMAL I/O BUFFER | EMC Corporation |
| 10812490 | 7243248 | METHOD AND SYSTEM FOR PROVIDING REDUNDANT POWER TO A DISK DRIVE SYSTEM | EMC Corporation |
| 10812498 | 7478404 | SYSTEM AND METHODS FOR EVENT IMPACT ANALYSIS | EMC Corporation |
| 10812509 | 7499994 | SYSTEM AND METHOD OF PROVIDING PERFORMANCE INFORMATION FOR A COMMUNICATIONS NETWORK | EMC Corporation |
| 10812511 | 7376898 | METHODS AND APPARATUS FOR MANAGING RESOURCES | EMC Corporation |
| 10812512 | 7539706 | METHODS AND APPARATUS FOR COLLECTING AND PROCESSING FILE SYSTEM DATA | EMC Corporation |
| 10812580 | 7331004 | DATA STORAGE SYSTEM ANALYZER HAVING SELF RESET | EMC Corporation |
| 10812860 | 7437445 | SYSTEM AND METHODS FOR HOST NAMING IN A MANAGED INFORMATION ENVIRONMENT | EMC Corporation |
| 10813842 | 7930158 | METHOD AND APPARATUS FOR MULTI-REALM SYSTEM MODELING | EMC Corporation |
| 10813989 | 7254654 | SPLIT-FIFO MULTI-STATION DATA TRANSFER SYSTEM | EMC Corporation |
| 10814117 | 7523187 | METHODS AND APPARATUS FOR MANAGING NETWORK RESOURCES | EMC Corporation |
| 10814206 | 8589513 | REMOTE MIRRORING OF GROUP NAME SERVICES | EMC Corporation |
| 10814663 | 7254575 | SYSTEM AND METHODS FOR IMPLEMENTING AN ADAPTIVE OBJECT MODEL | EMC Corporation |
| 10814666 | 7543019 | METHODS AND APPARATUS PROVIDING BACKWARD COMPATIBILITY FOR APPLICATIONS THAT ACCESS A CHANGING OBJECT MODEL | EMC Corporation |
| 10814964 | 6965845 | METHOD AND APPARATUS FOR SYSTEM MANAGEMENT USING CODEBOOK CORRELATION WITH SYMPTOM EXCLUSION | EMC Corporation |
| 10816202 | 7752176 | SELECTIVE DATA RESTORATION | EMC Corporation |
| 10827123 | 7409687 | OPERATION PRIORITIZATION AND SELECTION IN PROBABILITY-BASED JOB SCHEDULER | EMC Corporation |
| 10833457 | 7484058 | REACTIVE DEADLOCK MANAGEMENT IN STORAGE AREA NETWORKS | EMC Corporation |
| 10835746 | 7409391 | CONTROLLING ACCESS TO A STORAGE DEVICE | EMC Corporation |
| 10836104 | 8171170 | STORAGE SWITCH TASK PROCESSING SYNCHRONIZATION | EMC Corporation |
| 10836133 | 7773521 | STORAGE SWITCH TRAFFIC BANDWIDTH CONTROL | EMC Corporation |
| 10836415 | 7240150 | METHODS AND APPARATUS FOR PROCESSING ACCESS REQUESTS IN A CONTENT ADDRESSABLE COMPUTER SYSTEM | EMC Corporation |
| 10836502 | 7240151 | METHODS AND APPARATUS FOR TRANSFERRING DATA IN A CONTENT ADDRESSABLE COMPUTER SYSTEM | EMC Corporation |
| 10837240 | 7818475 | STORAGE SWITCH MIRRORED WRITE SEQUENCE COUNT MANAGEMENT | EMC Corporation |

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| 10837248 | 7529781 | ONLINE INITIAL MIRROR SYNCHRONIZATION AND MIRROR SYNCHRONIZATION VERIFICATION IN STORAGE AREA NETWORKS | EMC Corporation |
| 10837311 | 7428611 | METHODS AND APPARATUS FOR FORWARDING ACCESS REQUESTS IN A CONTENT ADDRESSABLE COMPUTER SYSTEM | EMC Corporation |
| 10846386 | 8356124 | METHOD AND SYSTEM FOR PROCESSING PACKET TRANSFERS | EMC Corporation |
| 10852789 | 7236361 | FAN ASSEMBLY FOR INSTALLING AND REMOVING FANS INDIVIDUALLY AND COLLECTIVELY | EMC Corporation |
| 10852897 | 7232193 | LOCKING MECHANISM FOR SECURING THE BEZEL OF AN ELECTRONICS ENCLOSURE TO A RACK STRUCTURE | EMC Corporation |
| | | | |
| 10853014 | 8463748 | FILE SYSTEM QUIESCING | EMC Corporation |
| 10853035 | 7155573 | CACHE FALL THROUGH TIME ESTIMATION | EMC Corporation |
| 10853250 | 7000074 | SYSTEM AND METHOD FOR UPDATING A CACHE | EMC Corporation |
| 10853746 | 7254016 | DATA STORAGE SYSTEM WITH IMPROVED SERVICEABILITY FEATURES | EMC Corporation |
| 10854007 | 7502954 | HIGH AVAILABILITY DATA STORAGE SYSTEM | EMC Corporation |
| 10858597 | 7519696 | METHOD AND APPARATUS FOR DYNAMICALLY MODIFYING A COMPUTER SYSTEM CONFIGURATION | EMC Corporation |
| 10860523 | 7206915 | VIRTUAL SPACE MANAGER FOR COMPUTER HAVING A PHYSICAL ADDRESS EXTENSION FEATURE | EMC Corporation |
| 10861796 | 7272602 | SYSTEM AND METHOD FOR UNORCHESTRATED DETERMINATION OF DATA SEQUENCES USING STICKY BYTE FACTORING TO DETERMINE BREAKPOINTS IN DIGITAL SEQUENCES | EMC Corporation |
| 10861830 | 8352439 | DATABASE VERIFICATION FOLLOWING DATABASE WRITE | EMC Corporation |
| 10864266 | 7734829 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR TRANSPARENTLY CONTROLLING COMMUNICATIONS BETWEEN NETWORK APPLICATIONS AND A PLURALITY OF NETWORK COMMUNICATIONS PROTOCOL STACKS USING DEFERRED PROTOCOL STACK ASSOCIATION | EMC Corporation |
| 10865136 | 7984136 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR DETERMINING LOCATIONS OF INTERCONNECTED PROCESSING MODULES AND FOR VERIFYING CONSISTENCY OF INTERCONNECT WIRING OF PROCESSING MODULES | EMC Corporation |
| 10868266 | 7254685 | METHOD FOR MAINTAINING HIGH PERFORMANCE WHILE PRESERVING RELATIVE WRITE I/O ORDERING FOR A SEMI-SYNCHRONOUS REMOTE REPLICATION SOLUTION | EMC Corporation |
| 10869807 | 7565610 | SYSTEM AND METHOD PROVIDING DETAILED NETWORK OBJECT PERFORMANCE INFORMATION TO LOCATE ROOT CAUSE | EMC Corporation |
| 10872074 | 7707186 | METHOD AND APPARATUS FOR DATA SET MIGRATION | EMC Corporation |

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| 10872123 | 7827476 | SYSTEM AND METHODS FOR A TASK MANAGEMENT USER INTERFACE | EMC Corporation |
| 10873744 | 8356015 | FILE SYSTEM QUIESCING DRIVER | EMC Corporation |
| 10874647 | 7536687 | SYSTEM AND METHOD FOR AUTOMATIC INSTALLATION OF EMBEDDED SOFTWARE PACKAGES | EMC Corporation |
| 10874833 | 7899933 | USE OF GLOBAL LOGICAL VOLUME IDENTIFIERS TO ACCESS LOGICAL VOLUMES STORED AMONG A PLURALITY OF STORAGE ELEMENTS IN A COMPUTER STORAGE SYSTEM | EMC Corporation |
| 10875466 | 6889292 | METHOD AND APPARATUS FOR ACCESSING DATA USING A CACHE | EMC Corporation |
| 10875494 | 7797483 | WRITE INTERCEPTOR FOR TRACKING CHANGES TO A DISK IMAGE | EMC Corporation |
| 10875785 | 7660310 | INDEX PROCESSING | EMC Corporation |
| 10877152 | 7783798 | SYSTEM AND METHOD FOR MANAGING USE OF AVAILABLE BANDWIDTH FOR A LINK USED FOR MOVEMENT OF DATA BEING COPIED IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10877244 | 7004764 | CIRCUIT BOARD RETAINER | EMC Corporation |
| 10878075 | 7660334 | SINGLE PRINTED CIRCUIT BOARD CONFIGURATION FOR A DATA STORAGE SYSTEM | EMC Corporation |
| 10878164 | 7240154 | LOW COST FLEXIBLE NETWORK ACCESSED STORAGE ARCHITECTURE | EMC Corporation |
| 10878300 | 7293181 | USE OF ONE VOLTAGE REGULATOR MODULE TO SUPPORT TWO PROCESSORS TO IMPROVE POWER AND THERMAL LIMITATIONS | EMC Corporation |
| 10879383 | 7640408 | ONLINE DATA MIGRATION | EMC Corporation |
| 10879543 | 7574538 | CONTIGUOUS I/O COMMAND QUEUING WITHIN A DATA STORAGE DEVICE | EMC Corporation |
| 10879687 | 7711813 | METHODS AND APPARATUS FOR DISPLAYING STORAGE RESOURCES | EMC Corporation |
| 10879688 | 7730428 | METHODS AND APPARATUS FOR DISPLAYING STORAGE RESOURCES | EMC Corporation |
| 10880279 | 7434022 | DISTRIBUTED WORKFLOW TECHNIQUES | EMC Corporation |
| 10880431 | 7475363 | METHODS AND APPARATUS FOR VIEWING NETWORK RESOURCES | EMC Corporation |
| 10881131 | 8051260 | DETERMINING ENVIRONMENTAL AVAILABILITY IN A STORAGE SUBSYSTEM | EMC Corporation |
| 10881331 | 7353358 | SYSTEM AND METHODS FOR REPORTING STORAGE UTILIZATION | EMC Corporation |
| 10881332 | 7836448 | SYSTEM AND METHODS FOR TASK MANAGEMENT | EMC Corporation |
| 10881530 | 7281097 | METHOD OF CONTROLLING THE PERFORMANCE OF A DATA STORAGE SYSTEM | EMC Corporation |
| 10881553 | 7062594 | ROOT COMPLEX CONNECTION SYSTEM | EMC Corporation |
| 10881558 | 8677086 | SYSTEM FOR CACHING DATA | EMC Corporation |
| 10881562 | 8688934 | METHOD FOR CACHING DATA | EMC Corporation |
| 10881588 | 7155821 | TECHNIQUES FOR MANUFACTURING A CIRCUIT BOARD HAVING A COUNTERSUNK VIA | EMC Corporation |
| 10881705 | 8037072 | SYSTEM AND METHOD FOR GENERATING CHARGE INFORMATION FOR USERS OF A DATA STORAGE SYSTEM | EMC Corporation |

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| 10881880 | 7266652 | SYSTEM AND METHOD FOR MANAGING DATA CONSISTENCY BETWEEN DIFFERENT DATA VOLUMES ON ONE OR MORE DATA STORAGE SYSTEMS IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10882651 | 7308529 | EFFICIENT MOUNTING AND DISMOUNTING OF STORAGE MEDIA | EMC Corporation |
| 10882843 | 7546428 | COMPUTER ARCHITECTURE FOR MANAGING REPLICATION OF DATA IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10883017 | 7076327 | SIMULTANEOUS PROCESSING OF MEDIA REQUESTS | EMC Corporation |
| 10883451 | 7549027 | SYSTEM AND METHOD FOR MANAGING REPLICATION OF DATA IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10883624 | 8561076 | PRIORITIZATION AND QUEUING OF MEDIA REQUESTS | EMC Corporation |
| 10884345 | 7499531 | METHOD AND SYSTEM FOR INFORMATION LIFECYCLE MANAGEMENT | EMC Corporation |
| 10884453 | 8103873 | METHOD AND SYSTEM FOR PROCESSING AUDITORY COMMUNICATIONS | EMC Corporation |
| 10884473 | 7457396 | AUTOMATED CALL MANAGEMENT | EMC Corporation |
| 10884477 | 7330536 | MESSAGE INDEXING AND ARCHIVING | EMC Corporation |
| 10886509 | 7000143 | SYSTEM AND METHOD FOR DATA PROTECTION WITH MULTIDIMENSIONAL PARITY | EMC Corporation |
| 10893839 | 7930550 | CONTENT ADDRESSABLE INFORMATION ENCAPSULATION, REPRESENTATION, AND TRANSFER | EMC Corporation |
| 10894450 | 7415731 | CONTENT ADDRESSABLE INFORMATION ENCAPSULATION, REPRESENTATION, AND TRANSFER | EMC Corporation |
| 10903898 | 7461399 | PIN RECOVERY IN A SMART CARD | EMC Corporation |
| 10905389 | 7337250 | LOW LATENCY DATA TRANSMISSION METHOD AND SYSTEM | EMC Corporation |
| 10905391 | 8270322 | METHOD AND SYSTEM FOR ARBITRATING DATA TRANSMISSIONS | EMC Corporation |
| 10905393 | 7400672 | METHOD AND SYSTEM FOR DETECTING TRANSMITTER ERRORS | EMC Corporation |
| 10909633 | 7376134 | PRIVILEGED NETWORK ROUTING | EMC Corporation |
| 10910076 | 7478022 | COMPONENT EMULATION DEVICE AND METHOD OF DESIGN | EMC Corporation |
| 10910985 | 7539813 | METHODS AND APPARATUS FOR SEGREGATING A CONTENT ADDRESSABLE COMPUTER SYSTEM | EMC Corporation |
| 10911330 | 8069269 | METHODS AND APPARATUS FOR ACCESSING CONTENT IN A VIRTUAL POOL ON A CONTENT ADDRESSABLE STORAGE SYSTEM | EMC Corporation |
| 10911365 | 7552282 | METHOD, COMPUTER READABLE MEDIUM, AND DATA STORAGE SYSTEM FOR SELECTIVE DATA REPLICATION OF CACHED DATA | EMC Corporation |
| 10915189 | 7298243 | RADIO FREQUENCY IDENTIFICATION SYSTEM WITH PRIVACY POLICY IMPLEMENTATION BASED ON DEVICE CLASSIFICATION | EMC Corporation |

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| 10917616 | 7292969 | METHOD AND SYSTEM FOR SIMULATING PERFORMANCE ON ONE OR MORE DATA STORAGE SYSTEMS | EMC Corporation |
| 10917737 | 7382824 | METHOD AND APPARATUS FOR ACCURATE MODELING OF MULTI-DOMAIN CLOCK INTERFACES | EMC Corporation |
| 10917753 | 7392360 | METHOD AND SYSTEM FOR CAPACITY PLANNING AND CONFIGURING ONE OR MORE DATA STORAGE SYSTEMS | EMC Corporation |
| 10918012 | 7483968 | SYSTEM AND METHOD FOR CONFIGURING RESOURCE GROUPS | EMC Corporation |
| 10918161 | 7383430 | SYSTEM AND METHOD FOR VALIDATING RESOURCE GROUPS | EMC Corporation |
| 10918578 | 7398471 | SYSTEM AND METHOD FOR THE ADMINISTRATION OF RESOURCE GROUPS | EMC Corporation |
| 10918805 | 7321893 | SYSTEM AND METHOD FOR THE CONFIGURATION OF RESOURCES IN RESOURCE GROUPS | EMC Corporation |
| | | | |
| 10925379 | 7730237 | FLOW CONTROL MECHANISM | EMC Corporation |
| 10931322 | 7210053 | SYSTEMS AND METHODS FOR ASSIGNING TASKS TO DERIVED TIMERS OF VARIOUS RESOLUTIONS IN REAL-TIME SYSTEMS TO MAXIMIZE TIMER USAGE | EMC Corporation |
| 10931325 | 7617365 | SYSTEMS AND METHODS TO AVOID DEADLOCK AND GUARANTEE MIRROR CONSISTENCY DURING ONLINE MIRROR SYNCHRONIZATION AND VERIFICATION | EMC Corporation |
| 10931681 | 8209185 | INTERFACE FOR MANAGEMENT OF AUDITORY COMMUNICATIONS | EMC Corporation |
| 10931794 | 7516214 | RULES ENGINE FOR MANAGING VIRTUAL LOGICAL UNITS IN A STORAGE NETWORK | EMC Corporation |
| 10931951 | 7072787 | METHOD FOR ANALYZING DATA STORAGE SYSTEM TEST DATA | EMC Corporation |
| 10932365 | 7373472 | STORAGE SWITCH ASYNCHRONOUS REPLICATION | EMC Corporation |
| 10934874 | 7165196 | METHOD FOR TESTING SERIALIZERS/DE-SERIALIZERS | EMC Corporation |
| 10935551 | 7346799 | SYSTEMS AND METHODS FOR RECOVERING AND BACKING UP DATA | EMC Corporation |
| 10935552 | 8645496 | SYSTEMS AND METHODS FOR BACKING UP DATA | EMC Corporation |
| 10936439 | 7095829 | DATA MESSAGE MIRRORING AND REDIRECTION | EMC Corporation |
| 10936442 | 7725098 | DATA MESSAGE PROCESSING | EMC Corporation |
| 10936443 | 7450937 | MIRRORED DATA MESSAGE PROCESSING | EMC Corporation |
| | | | |
| 10938422 | 8966276 | SYSTEM AND METHOD PROVIDING DISCONNECTED AUTHENTICATION | EMC Corporation |
| 10938848 | 8572391 | SYSTEM AND METHOD FOR RISK BASED AUTHENTICATION | EMC Corporation |
| 10940408 | 7631144 | WRITE LATENCY EFFICIENT STORAGE SYSTEM | EMC Corporation |
| 10941671 | 7493458 | TWO-PHASE SNAP COPY | EMC Corporation |
| 10942174 | 7689633 | NETWORK FILE SYSTEM-BASED DATA STORAGE SYSTEM | EMC Corporation |
| 10943090 | 8631038 | MANAGING DIGITAL IDENTITY INFORMATION | EMC Corporation |

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| 10945653 | 8166005 | PATHNAME CACHING AND PROTECTION OF THE ROOT DIRECTORY IN A NESTED MULTILAYER DIRECTORY STRUCTURE | EMC Corporation |
| 10945654 | 7315926 | LOCK MANAGEMENT FOR CONCURRENT ACCESS TO A SINGLE FILE FROM MULTIPLE DATA MOVER COMPUTERS | EMC Corporation |
| 10945677 | 7529724 | SERVICING WORK REQUESTS BETWEEN UNITS OF A STORAGE DEVICE | EMC Corporation |
| 10945831 | 7353908 | METHOD AND SYSTEM FOR ATTENUATING NOISE FROM A CABINET HOUSING COMPUTER EQUIPMENT | EMC Corporation |
| 10946148 | 8122201 | BACKUP WORK REQUEST PROCESSING BY ACCESSING A WORK REQUEST OF A DATA RECORD STORED IN GLOBAL MEMORY | EMC Corporation |
| 10947063 | 7454437 | METHODS AND APPARATUS FOR NAMING RESOURCES | EMC Corporation |
| 10948270 | 7203782 | QUEUEING METHOD SUPPORTING MULTIPLE CLIENT ACCESSES SIMULTANEOUSLY | EMC Corporation |
| 10948514 | 7565581 | ERROR HANDLING POLICY | EMC Corporation |
| 10948620 | 7653915 | N X M SNAPSHOT PLATFORM | EMC Corporation |
| 10949415 | 7441023 | METHOD AND APPARATUS FOR MODELING AND ANALYZING MPLS AND VIRTUAL PRIVATE NETWORKS | EMC Corporation |
| 10949539 | 7516492 | INFERRING DOCUMENT AND CONTENT SENSITIVITY FROM PUBLIC ACCOUNT ACCESSIBILITY | EMC Corporation |
| 10949545 | 7523301 | INFERRING CONTENT SENSITIVITY FROM PARTIAL CONTENT MATCHING | EMC Corporation |
| 10949552 | 7954151 | PARTIAL DOCUMENT CONTENT MATCHING USING SECTIONAL ANALYSIS | EMC Corporation |
| 10949589 | 7720003 | MODEL-BASED METHOD AND APPARATUS FOR DETERMINING MPLS NETWORK PROPERTIES | EMC Corporation |
| 10949852 | 7716315 | ENCLOSURE CONFIGURABLE TO PERFORM IN-BAND OR OUT-OF-BAND ENCLOSURE MANAGEMENT | EMC Corporation |
| 10950150 | 7783778 | MODEL-BASED MODEL-BASED METHOD AND APPARATUS FOR DETERMINING VIRTUAL PRIVATE NETWORK TOPOLOGIES | EMC Corporation |
| 10950950 | 7305572 | DISK DRIVE INPUT SEQUENCING FOR STAGGERED DRIVE SPIN-UP | EMC Corporation |
| 10950951 | 7155552 | APPARATUS AND METHOD FOR HIGHLY AVAILABLE MODULE INSERTION | EMC Corporation |
| 10952320 | 7698424 | TECHNIQUES FOR PRESENTING MULTIPLE DATA STORAGE ARRAYS TO ISCSI CLIENTS AS A SINGLE AGGREGATED NETWORK ARRAY | EMC Corporation |
| 10953156 | 7423859 | SYSTEM FOR PROTECTING COMPUTER EQUIPMENT FROM LIGHTNING VOLTAGE SURGES | EMC Corporation |
| 10953541 | 8307174 | SYSTEM AND METHOD FOR MANAGING SESSIONS AND REALLOCATING MEMORY RESOURCES USED FOR REPLICATION OF DATA IN A DATA STORAGE ENVIRONMENT | EMC Corporation |

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| 10953639 | 7509465 | SYSTEM AND METHOD FOR MANAGING MEMORY OR SESSION RESOURCES USED FOR MOVEMENT OF DATA BEING COPIED IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10953830 | 7299332 | SYSTEM AND METHOD FOR MANAGING SESSIONS AND ALLOCATING MEMORY RESOURCES USED FOR REPLICATION OF DATA IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 10954015 | 7315807 | SYSTEM AND METHODS FOR STORAGE AREA NETWORK SIMULATION | EMC Corporation |
| 10954915 | 7260689 | METHODS AND APPARATUS FOR DETECTING USE OF COMMON RESOURCES | EMC Corporation |
| 10954991 | 7546323 | SYSTEM AND METHODS FOR MANAGING BACKUP STATUS REPORTS | EMC Corporation |
| 10954992 | 7934018 | METHODS AND APPARATUS FOR SYNCHRONIZING CONFIGURATION DATA | EMC Corporation |
| 10955033 | 7246187 | METHOD AND APPARATUS FOR CONTROLLING EXCLUSIVE ACCESS TO A SHARED RESOURCE IN A DATA STORAGE SYSTEM | EMC Corporation |
| 10955136 | 8082397 | PRIVATE SLOT | EMC Corporation |
| 10955142 | 8185708 | HOST IMPLEMENTATION OF TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |
| 10955354 | 7263569 | METHOD AND SYSTEM FOR DISTRIBUTING POWER IN A COMPUTER SYSTEM | EMC Corporation |
| 10955355 | 7424554 | METHOD OF AND SYSTEM FOR CHANGING THE ADDRESS OF A DISK ARRAY ENCLOSURE | EMC Corporation |
| 10955470 | 8078813 | TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |
| 10955588 | 7499834 | SYSTEM AND METHODS FOR REPORTING DEVICE ALLOCATION | EMC Corporation |
| 10955805 | 8918677 | METHODS AND APPARATUS FOR PERFORMING DATA VALIDATION IN A NETWORK MANAGEMENT APPLICATION | EMC Corporation |
| 10955964 | 7478018 | SYSTEM AND METHODS FOR NETWORK CALL LOAD SIMULATION | EMC Corporation |
| 10956482 | 7801922 | FILE INDEX PROCESSING | EMC Corporation |
| 10956484 | 7685129 | DYNAMIC DATA SET MIGRATION | EMC Corporation |
| 10956493 | 7114033 | HANDLING DATA WRITES COPIED FROM A REMOTE DATA STORAGE DEVICE | EMC Corporation |
| 10956814 | 8626514 | INTERFACE FOR MANAGEMENT OF MULTIPLE AUDITORY COMMUNICATIONS | EMC Corporation |
| 10956822 | 7239241 | METHOD AND SYSTEM FOR INVENTORY CONTROL | EMC Corporation |
| 10956833 | 7245221 | INVENTORY CONTROL | EMC Corporation |
| 10957069 | 7716262 | INDEX PROCESSING | EMC Corporation |
| 10960447 | 8135861 | BACKUP PROXY | EMC Corporation |
| 10962031 | 7930649 | METHOD AND SYSTEM FOR SHARING AND MANAGING CONTEXT INFORMATION | EMC Corporation |
| 10966873 | 9329905 | METHOD AND APPARATUS FOR CONFIGURING, MONITORING AND/OR MANAGING RESOURCE GROUPS INCLUDING A VIRTUAL MACHINE | EMC Corporation |
| 10971892 | 8046560 | SERIAL NUMBER BASED STORAGE DEVICE ALLOCATION | EMC Corporation |

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| 10978025 | 7418619 | BACKUP AND RESTORE OPERATIONS OF INTERDEPENDENT SYSTEM COMPONENTS | EMC Corporation |
| 10978505 | 7260692 | METHODS AND APPARATUS FOR ACCESSING TRACE DATA | EMC Corporation |
| 10981885 | 7634518 | METHOD AND APPARATUS FOR MANAGING AND ARCHIVING PERFORMANCE INFORMATION RELATING TO STORAGE SYSTEM | EMC Corporation |
| 10982707 | 7949682 | METHOD FOR PROVIDING A FLAT VIEW OF A HIERARCHICAL NAMESPACE WITHOUT REQUIRING UNIQUE LEAF NAMES | EMC Corporation |
| 10984678 | 8161013 | IMPLEMENTING APPLICATION SPECIFIC MANAGEMENT POLICIES ON A CONTENT ADDRESSED STORAGE DEVICE | EMC Corporation |
| 10984686 | 7444464 | CONTENT ADDRESSED STORAGE DEVICE CONFIGURED TO MAINTAIN CONTENT ADDRESS MAPPING | EMC Corporation |
| 10985389 | 8626719 | METHOD AND SYSTEM TO PROVIDE FILES TO A CLIENT COMPUTER | EMC Corporation |
| 10995810 | 7409470 | DETERMINING CONFIGURATION DATA IN CONNECTION WITH DYNAMIC RDF | EMC Corporation |
| 10996997 | | MICRO-PAYMENT SCHEME ENCOURAGING COLLABORATION IN MULTI-HOP CELLULAR NETWORKS | EMC Corporation |
| 10997580 | 7716684 | SOFTWARE CONFIGURATION METHODS AND COMMON PRESENTATION LAYER | EMC Corporation |
| 10998458 | 7558856 | SYSTEM AND METHOD FOR INTELLIGENT, GLOBALLY DISTRIBUTED NETWORK STORAGE | EMC Corporation |
| 10998491 | 7363453 | METHOD AND APPARATUS FOR IMPROVING STORAGE DEVICE PERFORMANCE BY SELECTIVE VOLUME SWAPPING BASED ON HOT SPOT ANALYSIS | EMC Corporation |
| 10999820 | 7734051 | KEY DISTRIBUTION | EMC Corporation |
| 11/034192 | 7003433 | APPARATUS AND METHOD FOR EVENT CORRELATION AND PROBLEM REPORTING | EMC Corporation |
| 11/134479 | 8781975 | SYSTEM AND METHOD OF FRAUD REDUCTION | EMC Corporation |
| 11/536157 | 7725669 | BACKUP AND RESTORE OPERATIONS USING COHERENCY GROUPS FOR ISB PROTOCOL SYSTEMS | EMC Corporation |
| 11/769747 | 7631128 | PROTOCOL CONTROLLER FOR A DATA STORAGE SYSTEM | EMC Corporation |
| 11/774857 | 9280871 | GAMING SYSTEMS WITH AUTHENTICATION TOKEN SUPPORT | EMC Corporation |
| 11/840629 | 8494959 | PAYMENT CARD WITH DYNAMIC ACCOUNT NUMBER | EMC Corporation |
| 11/845163 | 7828004 | METHOD AND DEVICE FOR STORING CHEMICAL PRODUCTS IN A CONTAINER | EMC Corporation |
| 11/965254 | 9350595 | SYSTEM AND METHOD FOR SERIALIZING AND DESERIALIZING DATA OBJECTS INTO A SINGLE BINARY STREAM | EMC Corporation |
| 11001201 | 9268780 | CONTENT-DRIVEN INFORMATION LIFECYCLE MANAGEMENT | EMC Corporation |

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| 11001229 | 7359927 | METHOD FOR PERFORMING PERIODIC REPLICATION OF DATA ON A REMOTE STORAGE SYSTEM | EMC Corporation |
| 11001448 | 7478026 | APPLICATION PROGRAMMING INTERFACE SIMULATOR FOR A DATA STORAGE SYSTEM | EMC Corporation |
| 11001489 | 7620720 | METHODS AND APPARATUS FOR DEALLOCATION OF RESOURCES | EMC Corporation |
| 11002543 | 7475285 | METHOD AND APPARATUS FOR PROVIDING HOST RESOURCES FOR AN ELECTRONIC COMMERCE SITE | EMC Corporation |
| 11006472 | 7529181 | METHOD AND APPARATUS FOR ADAPTIVE MONITORING AND MANAGEMENT OF DISTRIBUTED SYSTEMS | EMC Corporation |
| 11008861 | 7123485 | TECHNIQUES FOR MOVING A POWER SUPPLY WITHIN AN ELECTRONIC CABINET | EMC Corporation |
| 11011177 | 8996821 | METHODS AND SYSTEMS FOR PROVIDING RESOURCE SHARING THROUGH FILE ISOMORPHISM DESCRIPTOR | EMC Corporation |
| 11011345 | 7676587 | DISTRIBUTED IP TRUNKING AND SERVER CLUSTERING FOR SHARING OF AN IP SERVER ADDRESS AMONG IP SERVERS | EMC Corporation |
| 11014338 | 7707331 | PATH DETERMINATION USING PREFERRED PATHS OR RANDOMLY SELECTING SOURCE AND TARGET PORTS | EMC Corporation |
| 11014405 | 7743171 | FORMATTING AND INITIALIZATION OF DEVICE MIRRORS USING INITIALIZATION INDICATORS | EMC Corporation |
| 11014597 | 7634595 | METHOD FOR SUSPENDING A DISCOVERY PROCESS, SAVING THE STATE OF THE DISCOVERY PROCESS, AND RESUMING THE DISCOVERY PROCESS DURING A DISTRIBUTED COPY OPERATION | EMC Corporation |
| 11015219 | 7308670 | SYSTEM AND METHOD FOR DESIGNING ELECTRICAL TRACE LENGTHS ON PRINTED CIRCUIT BOARDS BETWEEN IMPEDANCE DISCONTINUITIES | EMC Corporation |
| 11017244 | 7424785 | LABEL CASSETTE FOR AN ELECTRONICS ENCLOSURE | EMC Corporation |
| 11017292 | 7398431 | SYSTEM AND METHOD OF DYNAMICALLY SETTING A FAULT THRESHOLD FOR AN OPERATIONAL MODULE | EMC Corporation |
| 11017307 | 7386772 | TEST MODULE FOR TESTING OF ELECTRONIC SYSTEMS | EMC Corporation |
| 11017308 | 7238030 | MULTI-FUNCTION EXPANSION SLOTS FOR A STORAGE SYSTEM | EMC Corporation |
| 11017554 | 7343467 | METHOD TO PERFORM PARALLEL DATA MIGRATION IN A CLUSTERED STORAGE ENVIRONMENT | EMC Corporation |
| 11019483 | 7095578 | DETECTION OF FLY HEIGHT CHANGE IN A DISK DRIVE USING HEAD DRAG | EMC Corporation |
| 11019696 | 7746875 | SYSTEM AND METHOD FOR PROTECTING AND SHARING DATA ACROSS A NETWORK | EMC Corporation |

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| 11019699 | 7275107 | SYSTEM AND METHOD FOR DETERMINING A WORLD WIDE NAME FOR USE WITH A HOST FOR ENABLING COMMUNICATION WITH A DATA STORAGE SYSTEM WITHOUT REQUIRING THAT THE HOST AND DATA STORAGE SYSTEM BE IN COMMUNICATION DURING THE DETERMINATION | EMC Corporation |
| 11019700 | | [REDACTED] | EMC Corporation |
| 11020722 | 7133795 | TECHNIQUES FOR TESTING AN ELECTRONIC SYSTEM USING IN-LINE SIGNAL DISTORTION | EMC Corporation |
| 11020805 | 7222983 | ELECTRONIC SYSTEM HAVING FRONT PANEL ASSEMBLY WITH REFLECTIVE CAPABILITY | EMC Corporation |
| 11021012 | 7979665 | METHOD AND APPARATUS FOR PROCESSING ACCESS REQUESTS IN A COMPUTER SYSTEM | EMC Corporation |
| 11021107 | 7881946 | METHODS AND APPARATUS FOR GUIDING A USER THROUGH A SAN MANAGEMENT PROCESS | EMC Corporation |
| 11021355 | 8301739 | STORAGE SYSTEM INITIALIZATION UTILITY | EMC Corporation |
| 11021378 | 7376681 | METHODS AND APPARATUS FOR ACCESSING INFORMATION IN A HIERARCHICAL FILE SYSTEM | EMC Corporation |
| 11021565 | 7478107 | METHODS AND APPARATUS FACILITATING MANAGEMENT OF A SAN | EMC Corporation |
| 11021892 | 7366836 | SOFTWARE SYSTEM FOR PROVIDING STORAGE SYSTEM FUNCTIONALITY | EMC Corporation |
| 11022211 | 7406633 | ARCHITECTURE FOR HANDLING ERRORS IN ACCORDANCE WITH A RISK SCORE FACTOR | EMC Corporation |
| 11022509 | 7262972 | ELECTRONIC SYSTEM HAVING SPACE-EFFICIENT FRONT PANEL ASSEMBLY | EMC Corporation |
| 11022512 | 7393193 | TECHNIQUES FOR MAKING A METALLIC PRODUCT UTILIZING ELECTRIC CURRENT IN A CONSOLIDATION PROCESS | EMC Corporation |
| 11022530 | 7401266 | SYSTEM AND METHOD FOR HANDLING ERRORS IN ACCORDANCE WITH A RISK SCORE FACTOR | EMC Corporation |
| 11022998 | 7729239 | PACKET SWITCHING NETWORK END POINT CONTROLLER | EMC Corporation |
| 11022999 | 7211767 | TECHNIQUES FOR TREATING A SURFACE CRACK ON A COMPONENT | EMC Corporation |
| 11023000 | 7313656 | PRE-FETCH PREDICTION METHOD FOR DISK DRIVES | EMC Corporation |
| 11023103 | 7302821 | TECHNIQUES FOR MANUFACTURING A PRODUCT USING ELECTRIC CURRENT DURING PLASTIC DEFORMATION OF MATERIAL | EMC Corporation |
| 11023301 | 7774445 | SYSTEM AND METHOD FOR MANAGING ZONING IN A STORAGE AREA NETWORK BY COMPARING ZONE SETS AND IDENTIFYING DIFFERENCES BETWEEN ZONE SETS | EMC Corporation |
| 11023668 | 7457824 | METHODS AND APPARATUS FOR MANAGING GROUPS OF RESOURCES | EMC Corporation |
| 11023773 | 7284011 | SYSTEM AND METHODS FOR PROCESSING A MULTIDIMENSIONAL DATABASE | EMC Corporation |
| | | | |
| 11024231 | 7469284 | METHODS AND APPARATUS FOR ASSIGNING MANAGEMENT RESPONSIBILITIES TO MULTIPLE AGENTS | EMC Corporation |

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| 11025580 | 8190715 | SYSTEM AND METHODS FOR REMOTE AGENT INSTALLATION | EMC Corporation |
| 11026736 | 7254673 | PROVISION OF A VICTIM CACHE WITHIN A STORAGE CACHE HIERARCHY | EMC Corporation |
| 11027505 | 7293135 | INVERTIBLE DISK DRIVE CONNECTION SCHEME | EMC Corporation |
| 11027997 | 8180742 | POLICY BASED INFORMATION MANAGEMENT | EMC Corporation |
| 11028080 | 8180743 | INFORMATION MANAGEMENT | EMC Corporation |
| 11028089 | 8229904 | STORAGE POOLS FOR INFORMATION MANAGEMENT | EMC Corporation |
| 11034613 | 7428621 | METHODS AND APPARATUS FOR STORING A REFLECTION ON A STORAGE SYSTEM | EMC Corporation |
| 11034732 | 7698516 | METHODS AND APPARATUS FOR MANAGING DELETION OF DATA | EMC Corporation |
| 11034737 | 7281084 | METHOD AND APPARATUS FOR MODIFYING A RETENTION PERIOD | EMC Corporation |
| 11037932 | 7437515 | DATA STRUCTURE FOR WRITE PENDING | EMC Corporation |
| 11049817 | 7392361 | GENERIC REALLOCATION FUNCTION FOR HEAP RECONSTITUTION IN A MULTI-PROCESSOR SHARED MEMORY ENVIRONMENT | EMC Corporation |
| 11050549 | 7730321 | SYSTEM AND METHOD FOR AUTHENTICATION OF USERS AND COMMUNICATIONS RECEIVED FROM COMPUTER SYSTEMS | EMC Corporation |
| 11052395 | 7624167 | METHOD AND APPARATUS FOR ARRANGING DISTRIBUTED SYSTEM TOPOLOGY AMONG A PLURALITY OF NETWORK MANAGERS | EMC Corporation |
| 11054331 | 7568156 | LANGUAGE RENDERING | EMC Corporation |
| 11054577 | 7698406 | METHOD AND SYSTEM FOR IDENTIFYING AND CLASSIFYING NETWORK-BASED APPLICATIONS | EMC Corporation |
| 11054578 | 7761527 | METHOD AND APPARATUS FOR DISCOVERING NETWORK BASED DISTRIBUTED APPLICATIONS | EMC Corporation |
| 11059885 | 7672303 | ARBITRATION METHOD AND SYSTEM | EMC Corporation |
| 11059961 | 7853716 | DATA STORAGE SYSTEM HAVING PACKET SWITCHING NETWORK WITH LATENCY ARBITRATION | EMC Corporation |
| 11069373 | 7000086 | VIRTUAL ORDERED WRITES | EMC Corporation |
| 11070516 | 7295398 | HIGH SPEED CLEANUP OF REMOVABLE STORAGE DEVICE | EMC Corporation |
| 11072128 | 7310716 | TECHNIQUES FOR PRODUCING A CONSISTENT COPY OF SOURCE DATA AT A TARGET LOCATION | EMC Corporation |
| 11072141 | 8005795 | TECHNIQUES FOR RECORDING FILE OPERATIONS AND CONSISTENCY POINTS FOR PRODUCING A CONSISTENT COPY | EMC Corporation |
| 11072612 | 7177994 | CHECKPOINT AND CONSISTENCY MARKERS | EMC Corporation |
| 11076618 | 7162559 | SYSTEM FOR CONTROLLING INTERRUPTS BETWEEN INPUT/OUTPUT DEVICES AND CENTRAL PROCESSING UNITS | EMC Corporation |
| 11077932 | 7949739 | METHOD AND APPARATUS FOR DETERMINING CAUSALITY MAPPING OF DISTRIBUTED SYSTEMS | EMC Corporation |
| 11077933 | 7546609 | METHOD AND APPARATUS FOR DETERMINING MONITORING LOCATIONS IN DISTRIBUTED SYSTEMS | EMC Corporation |
| 11079560 | 7606804 | SYSTEM AND METHOD FOR INFORMATION MANAGEMENT IN A DISTRIBUTED NETWORK | EMC Corporation |

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| 11080047 | 7210060 | SYSTEMS AND METHODS FOR RESTORING DATA | EMC Corporation |
| 11080229 | 7526514 | SYSTEMS AND METHODS FOR DYNAMIC DATA BACKUP | EMC Corporation |
| 11081177 | 7703091 | METHODS AND APPARATUS FOR INSTALLING AGENTS IN A MANAGED NETWORK | EMC Corporation |
| 11083486 | 8812595 | SCANNING A MESSAGE-LIST | EMC Corporation |
| 11083571 | 7574555 | MEMORY SYSTEM HAVING DAISY CHAINED MEMORY CONTROLLERS | EMC Corporation |
| 11084065 | 8676862 | INFORMATION MANAGEMENT | EMC Corporation |
| 11084179 | 8260753 | BACKUP INFORMATION MANAGEMENT | EMC Corporation |
| 11084679 | | VERSATILE INFORMATION MANAGEMENT | EMC Corporation |
| 11085898 | 8055724 | SELECTION OF MIGRATION METHODS INCLUDING PARTIAL READ RESTORE IN DISTRIBUTED STORAGE MANAGEMENT | EMC Corporation |
| 11085911 | 7546431 | DISTRIBUTED OPEN WRITABLE SNAPSHOT COPY FACILITY USING FILE MIGRATION POLICIES | EMC Corporation |
| 11087111 | 7281105 | METHOD AND APPARATUS FOR SELECTING DATA STORAGE DEVICES FOR PARTICIPATING IN LOGICAL VOLUME EXCHANGE PROCESS BASED ON AGGREGATED WORKLOAD STATISTICS | EMC Corporation |
| 11087113 | 7281106 | METHOD AND APPARATUS FOR SELECTIVE VOLUME SWAPPING IN A DATA STORAGE DEVICE BASED ON MERGING MULTIPLE SETS OF CANDIDATE STORAGE DEVICES | EMC Corporation |
| 11087114 | 7334092 | METHOD AND APPARATUS FOR SCORING DATA STORAGE DEVICES FOR PARTICIPATING IN LOGICAL VOLUME EXCHANGE PROCESS | EMC Corporation |
| 11088349 | 7562222 | SYSTEM AND METHOD FOR AUTHENTICATING ENTITIES TO USERS | EMC Corporation |
| 11089702 | 7457914 | ASYNCHRONOUS EVENT NOTIFICATION | EMC Corporation |
| 11089817 | 7121857 | TOLERANCE-ABSORBING INTERCONNECT SYSTEM USING A SPRING-LOADED CONNECTOR | EMC Corporation |
| 11090732 | 7097477 | TECHNIQUES FOR CONTROLLING COUPLING BETWEEN A MOTHERBOARD AND A DAUGHTER CARD | EMC Corporation |
| 11091910 | 7793160 | SYSTEMS AND METHODS FOR TRACING ERRORS | EMC Corporation |
| 11092006 | 7363520 | TECHNIQUES FOR PROVIDING POWER TO A SET OF POWERABLE DEVICES | EMC Corporation |
| 11092039 | 7362572 | TECHNIQUES FOR REDUNDANT COMPUTING WITHIN A 1U FORM FACTOR WITH IMPROVED RESOURCE PARTITIONING AND MANAGEMENT | EMC Corporation |
| 11092535 | 7486526 | TECHNIQUES FOR REDUNDANT COMPUTING FROM WITHIN A 1U FORM FACTOR WITH IMPROVED SERVICEABILITY AND HIGH AVAILABILITY CHARACTERISTICS | EMC Corporation |
| 11093019 | 7606815 | NON-RECURSIVE PROCESSING OF HIERARCHICAL DATA | EMC Corporation |
| 11093632 | 7945756 | SYSTEM AND METHOD FOR MANAGING A DATA STORAGE SYSTEM BY CONTACTING A SINGLE PROCESSOR IN A DATA STORAGE SYSTEM HAVING MORE THAN ONE PROCESSOR | EMC Corporation |
| 11094024 | 7173787 | APPARATUS AND METHOD FOR CONTROLLING DISK DRIVE SPIN UP | EMC Corporation |

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| 11094026 | 8261066 | SYSTEM AND METHOD FOR SECURE STORAGE, TRANSFER AND RETRIEVAL OF CONTENT ADDRESSABLE INFORMATION | EMC Corporation |
| 11094050 | 7321948 | HIGHLY AVAILABLE SYSTEM TEST MECHANISM | EMC Corporation |
| 11094118 | 7277986 | SECTOR-EDGE CACHE | EMC Corporation |
| 11094494 | 7954098 | SYSTEM AND METHODS FOR SAN AGENT INSTALLATION | EMC Corporation |
| 11094637 | 7395198 | TECHNIQUES FOR POWERING AN ELECTRONIC DEVICE WITH SIMULATED BACKUP POWER SUPPLY COMMUNICATIONS | EMC Corporation |
| 11094649 | 8086569 | ASYNCHRONOUS DETECTION OF LOCAL EVENT BASED POINT-IN-TIME STATE OF LOCAL-COPY IN THE REMOTE-COPY IN A DELTA-SET ASYNCHRONOUS REMOTE REPLICATION | EMC Corporation |
| 11094772 | 7694007 | METHODS AND APPARATUS FOR MANAGING REQUESTS | EMC Corporation |
| 11094773 | 7640533 | SYSTEM AND METHODS FOR DEFINING A SOFTWARE BUILD | EMC Corporation |
| 11094817 | 7653712 | METHODS AND APPARATUS FOR PROCESSING CONFIGURATION DATA | EMC Corporation |
| 11095099 | 7219175 | METHOD AND SYSTEM FOR IMPROVING THE LATENCY IN A DATA TRANSMISSION SYSTEM | EMC Corporation |
| 11095406 | 7546309 | METHODS AND APPARATUS FOR CREATING MIDDLEWARE INDEPENDENT SOFTWARE | EMC Corporation |
| 11095420 | 7243177 | METHOD AND SYSTEM FOR THROTTLING DATA PACKETS IN A DATA TRANSMISSION SYSTEM | EMC Corporation |
| 11095421 | 7444350 | METHOD AND APPARATUS FOR PROCESSING MANAGEMENT INFORMATION | EMC Corporation |
| 11095885 | 7328318 | SYSTEM AND METHOD FOR ATOMIC MULTI-VOLUME OPERATIONS | EMC Corporation |
| 11095886 | 7334096 | ARCHITECTURE AND APPARATUS FOR ATOMIC MULTI-VOLUME OPERATIONS | EMC Corporation |
| 11095986 | 7516452 | METHOD AND SYSTEM FOR MANAGING INSTALLATION OF SOFTWARE ON A COMPUTER SYSTEM PLATFORM | EMC Corporation |
| 11096816 | 7707037 | ARCHIVING OF SURVEILLANCE DATA | EMC Corporation |
| 11096962 | 7444287 | EFFICIENT MONITORING SYSTEM AND METHOD | EMC Corporation |
| 11097887 | 8244542 | VIDEO SURVEILLANCE | EMC Corporation |
| 11104735 | 7275201 | MEMORY SYSTEM | EMC Corporation |
| 11107063 | 7392235 | METHODS AND APPARATUS FOR RETRIEVAL OF CONTENT UNITS IN A TIME-BASED DIRECTORY STRUCTURE | EMC Corporation |
| 11107194 | 7765191 | METHODS AND APPARATUS FOR MANAGING THE REPLICATION OF CONTENT | EMC Corporation |
| 11107995 | 7657579 | TRAVERSING DATA IN A REPEATABLE MANNER | EMC Corporation |
| 11112059 | 8132011 | METHOD AND APPARATUS FOR AUTHENTICATION OF USERS AND WEB SITES | EMC Corporation |
| 11112938 | 8751801 | SYSTEM AND METHOD FOR AUTHENTICATING USERS USING TWO OR MORE FACTORS | EMC Corporation |
| 11114761 | 7290330 | COUPLING INVERTIBLE AND PLUGGABLE MODULE TO A CIRCUIT BOARD | EMC Corporation |
| 11120602 | 7716642 | TECHNIQUES FOR DETECTING CODING INCOMPATIBILITIES | EMC Corporation |

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| 11121213 | 8522086 | METHOD AND APPARATUS FOR PROVIDING RELOCATION NOTIFICATION | EMC Corporation |
| 11124776 | 7243046 | SYSTEM AND METHOD FOR PREPARING TRACE DATA FOR ANALYSIS | EMC Corporation |
| 11124875 | 7797585 | SYSTEM AND METHOD FOR HANDLING TRACE DATA FOR ANALYSIS | EMC Corporation |
| 11129023 | 7240116 | DYNAMIC RDF GROUPS | EMC Corporation |
| | | | |
| 11129858 | 7434093 | DUAL CHANNEL RESTORATION OF DATA BETWEEN PRIMARY AND BACKUP SERVERS | EMC Corporation |
| 11130042 | 7626939 | METHOD AND APPARATUS FOR AUTOMATED TIME-BASED PEER-TO-PEER THRESHOLDING | EMC Corporation |
| 11130046 | 7970945 | METHOD AND APPARATUS FOR AUTOMATIC PEER-TO-PEER CONTENT COMPARISON | EMC Corporation |
| 11134935 | 7444485 | METHOD AND APPARATUS FOR DUPLICATING COMPUTER BACKUP DATA | EMC Corporation |
| 11137749 | 7797675 | CATEGORICAL APPROACH FOR IMPLEMENTING A SOFTWARE COMPONENT DEVELOPMENT ARCHITECTURE | EMC Corporation |
| 11138065 | 7801859 | TRACKING FILESYSTEM BACKUPS | EMC Corporation |
| 11139013 | 8335768 | SELECTING DATA IN BACKUP DATA SETS FOR GROOMING AND TRANSFERRING | EMC Corporation |
| 11143272 | 7337289 | METHOD AND APPARATUS FOR COMPUTING FILE STORAGE ELEMENTS FOR BACKUP AND RESTORE | EMC Corporation |
| 11143813 | 7281086 | DISK QUEUE MANAGEMENT FOR QUALITY OF SERVICE | EMC Corporation |
| 11148477 | 7818735 | SYSTEM AND METHOD FOR ENABLING ACCESS AND USE OF SOFTWARE INSTALLED ON A DATA STORAGE SYSTEM | EMC Corporation |
| 11151619 | 7591022 | CONTENT ADDRESSABLE INFORMATION ENCAPSULATION, REPRESENTATION, AND TRANSFER | EMC Corporation |
| 11153678 | 8261336 | SYSTEM AND METHOD FOR MAKING ACCESSIBLE A SET OF SERVICES TO USERS | EMC Corporation |
| 11153932 | 7454561 | METHOD FOR OPERATING DISK DRIVES IN A DATA STORAGE SYSTEM | EMC Corporation |
| 11154234 | 8423728 | PHYSICAL BASED SCHEDULER USING RUN COUNT AND SKIP COUNT VALUES | EMC Corporation |
| 11154964 | 8301851 | CONSECUTIVE SCHEDULING OF JOBS FOR A DEVICE USING RUN COUNT VALUES | EMC Corporation |
| 11158591 | 7331619 | LATCH-SPRING ASSEMBLY FOR ENCLOSURES | EMC Corporation |
| 11158722 | 7809888 | CONTENT-AWARE CACHING TECHNIQUES | EMC Corporation |
| 11158769 | 7774763 | TECHNIQUES FOR FORMING A MULTI-TASKING EXECUTABLE PROGRAM AND USING THE SAME | EMC Corporation |
| 11158866 | 7849460 | METHODS AND APPARATUS FOR MULTIPLE POINT IN TIME DATA ACCESS | EMC Corporation |
| 11159279 | 8244811 | METHOD AND APPARATUS FOR SEARCHING MESSAGING IDENTITIES | EMC Corporation |
| 11159280 | 7908326 | METHOD AND APPARATUS FOR MANAGING MESSAGING IDENTITIES | EMC Corporation |
| 11159281 | 7899868 | METHOD AND APPARATUS FOR DEFINING MESSAGING IDENTITIES | EMC Corporation |

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| 11165104 | 7805470 | METHODS AND APPARATUS FOR MANAGING THE STORAGE OF CONTENT IN A FILE SYSTEM | EMC Corporation |
| 11166579 | 7783883 | METHOD AND APPARATUS FOR VALIDATING E-MAIL MESSAGES | EMC Corporation |
| 11166822 | 7298167 | POWER SUPPLY SYSTEM | EMC Corporation |
| 11166934 | 7673285 | SYSTEM AND METHODS FOR GENERATING A SOFTWARE COMPONENT INTERFACE | EMC Corporation |
| 11166956 | 8281152 | STORAGE DATA ENCRYPTION | EMC Corporation |
| 11167704 | 7577866 | TECHNIQUES FOR FAULT TOLERANT DATA STORAGE | EMC Corporation |
| 11167884 | 7472210 | MULTIPLEXING AND BYPASS CIRCUIT FOR INTERFACING EITHER SINGLE OR DUAL PORTED DRIVES TO MULTIPLE STORAGE PROCESSORS | EMC Corporation |
| 11168136 | 7620671 | DELEGATION OF METADATA MANAGEMENT IN A STORAGE SYSTEM BY LEASING OF FREE FILE SYSTEM BLOCKS FROM A FILE SYSTEM OWNER | EMC Corporation |
| 11169418 | 7716185 | CREATION OF A SINGLE CLIENT SNAPSHOT USING A CLIENT UTILITY | EMC Corporation |
| 11169419 | 8024292 | CREATION OF A SINGLE SNAPSHOT USING A SERVER JOB REQUEST | EMC Corporation |
| 11169458 | 7577681 | METHODS AND APPARATUS FOR MANAGING CONTENTS OF A DATABASE | EMC Corporation |
| 11169460 | 7716498 | POWER CONTROL IN A DATA STORAGE SYSTEM | EMC Corporation |
| 11169463 | 8209354 | TRANSACTION LIFECYCLE MANAGEMENT IN DISTRIBUTED MANAGEMENT SYSTEMS | EMC Corporation |
| 11169464 | 7447709 | METHODS AND APPARATUS FOR SYNCHRONIZING CONTENT | EMC Corporation |
| 11169473 | 7447833 | TECHNIQUES FOR PROVIDING COMMUNICATIONS IN A DATA STORAGE SYSTEM USING A SINGLE IC FOR BOTH STORAGE DEVICE COMMUNICATIONS AND PEER-TO-PEER COMMUNICATIONS | EMC Corporation |
| 11169853 | 7549028 | BACKUP AND RESTORE OPERATIONS USING A SINGLE SNAPSHOT DRIVEN BY A SERVER JOB REQUEST | EMC Corporation |
| 11170015 | 7523278 | BACKUP AND RESTORE OPERATIONS USING A SINGLE SNAPSHOT | EMC Corporation |
| 11170026 | 7506336 | SYSTEM AND METHODS FOR VERSION COMPATIBILITY CHECKING | EMC Corporation |
| 11170027 | 8180846 | METHOD AND APPARATUS FOR OBTAINING AGENT STATUS IN A NETWORK MANAGEMENT APPLICATION | EMC Corporation |
| 11171841 | 8639864 | METHOD AND SYSTEM FOR FACILITATING COMMUNICATION BETWEEN A HOST AND DOWNSTREAM DEVICES IN A DATA STORAGE SYSTEM | EMC Corporation |
| 11171906 | 8646070 | VERIFYING AUTHENTICITY IN DATA STORAGE MANAGEMENT SYSTEMS | EMC Corporation |
| 11172378 | 7886345 | PASSWORD-PROTECTION MODULE | EMC Corporation |
| 11173174 | 8059805 | ENHANCED SERVICES PROVIDED USING COMMUNICATION REDIRECTION AND PROCESSING | EMC Corporation |
| 11173910 | 8161005 | EFFICIENT INDEX PROCESSING | EMC Corporation |

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| 11173949 | 8605878 | REDIRECTING AND MIRRORING OF TELEPHONIC COMMUNICATIONS | EMC Corporation |
| 11174070 | 8156079 | SYSTEM AND METHOD FOR INDEX PROCESSING | EMC Corporation |
| 11174083 | 7966292 | INDEX PROCESSING | EMC Corporation |
| 11174288 | 8831194 | TELEPHONIC COMMUNICATION REDIRECTION AND COMPLIANCE PROCESSING | EMC Corporation |
| 11176784 | 7065467 | METHOD AND APPARATUS FOR SYSTEM MANAGEMENT USING CODEBOOK CORRELATION WITH SYMPTOM EXCLUSION | EMC Corporation |
| 11183461 | 7174423 | REMOTE MIRRORING IN A SWITCHED ENVIRONMENT | EMC Corporation |
| 11186554 | 8239518 | METHOD FOR DETECTING AND RESOLVING A PARTITION CONDITION IN A CLUSTER | EMC Corporation |
| 11188220 | 7779296 | STORING DATA REPLICAS REMOTELY | EMC Corporation |
| 11189043 | 7747763 | SYSTEM AND METHOD FOR ENSURING A DEVICE USES THE CORRECT INSTANCE OF A NETWORK SERVICE | EMC Corporation |
| 11191633 | 7750793 | METHODS AND APPARATUS FOR RFID DEVICE AUTHENTICATION | EMC Corporation |
| 11196928 | 7793112 | ACCESS TO CONTENT ADDRESSABLE DATA OVER A NETWORK | EMC Corporation |
| 11197126 | | [REDACTED] | EMC Corporation |
| 11197854 | 7506157 | ACCESS TO CONTENT ADDRESSABLE DATA OVER A NETWORK | EMC Corporation |
| 11207588 | 7716171 | SNAPSHOT INDEXING | EMC Corporation |
| 11207596 | 9026512 | DATA OBJECT SEARCH AND RETRIEVAL | EMC Corporation |
| 11207606 | | SEARCHABLE BACKUPS | EMC Corporation |
| 11208096 | | [REDACTED] | EMC Corporation |
| 11208291 | 7293136 | MANAGEMENT OF TWO-QUEUE REQUEST STRUCTURE FOR QUALITY OF SERVICE IN DISK STORAGE SYSTEMS | EMC Corporation |
| 11210477 | 7530115 | ACCESS TO CONTENT ADDRESSABLE DATA OVER A NETWORK | EMC Corporation |
| 11211050 | 8195153 | MOBILE ACCESS TO BACKUP AND RECOVERY SERVICES | EMC Corporation |
| 11211234 | 7860016 | METHOD AND APPARATUS FOR CONFIGURATION AND ANALYSIS OF NETWORK ROUTING PROTOCOLS | EMC Corporation |
| 11211250 | 7912055 | METHOD AND SYSTEM FOR CONFIGURATION AND ANALYSIS OF NETWORK MULTICAST ROUTING PROTOCOLS | EMC Corporation |
| 11212898 | 7350041 | METHODS AND APPARATUS FOR MANAGING THE STORAGE OF CONTENT | EMC Corporation |
| 11213233 | 7320059 | METHODS AND APPARATUS FOR DELETING CONTENT FROM A STORAGE SYSTEM | EMC Corporation |
| 11213565 | 7636704 | METHODS AND APPARATUS FOR SCHEDULING AN ACTION ON A COMPUTER | EMC Corporation |
| 11214549 | 7193809 | METHOD OF COMPENSATING FOR MICROJOG ERROR DUE TO REPEATABLE RUN-OUT | EMC Corporation |
| 11220780 | 7617216 | METADATA OFFLOAD FOR A FILE SERVER CLUSTER | EMC Corporation |
| 11224408 | 7430589 | REMOTE DATA FACILITY OVER AN IP NETWORK | EMC Corporation |

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| 11224509 | 7577767 | DATA STORAGE SYSTEM HAVING PLURAL STORAGE PROCESSORS IN A SINGLE CHASSIS | EMC Corporation |
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| 11229976 | 7673115 | DATA OPERATION VALIDATION | EMC Corporation |
| 11230706 | 7355417 | TECHNIQUES FOR OBTAINING ELECTROMAGNETIC DATA FROM A CIRCUIT BOARD | EMC Corporation |
| 11231705 | 7571387 | METHODS AND APPARATUS FACILITATING MANAGEMENT OF A SAN | EMC Corporation |
| 11231730 | 7434012 | TECHNIQUES FOR MEDIA SCRUBBING | EMC Corporation |
| 11233261 | 7603376 | FILE AND FOLDER SCANNING METHOD AND APPARATUS | EMC Corporation |
| 11233292 | 7668924 | METHODS AND SYSTEM FOR INTEGRATING SAN SERVERS | EMC Corporation |
| 11233643 | 7475076 | METHOD AND APPARATUS FOR PROVIDING REMOTE ALERT REPORTING FOR MANAGED RESOURCES | EMC Corporation |
| 11233687 | 7640264 | SYSTEM AND METHODS FOR QUERYING A REPORT DATABASE | EMC Corporation |
| 11233810 | 7721211 | METHODS AND APPARATUS PROVIDING FILTERING IN A MANAGEMENT APPLICATION | EMC Corporation |
| 11233811 | 7546312 | SYSTEM AND METHODS FOR MODELING A REPORT QUERY DATABASE | EMC Corporation |
| 11233838 | 7668877 | SYSTEM AND METHODS FOR DEFINING A CANONICAL QUERY EXPRESSION | EMC Corporation |
| 11233843 | 7783743 | METHODS AND APPARATUS FOR PROCESSING ELECTRONIC MAIL-RELATED DATA | EMC Corporation |
| 11234612 | 7454668 | TECHNIQUES FOR DATA SIGNATURE AND PROTECTION AGAINST LOST WRITES | EMC Corporation |
| 11237051 | 7363418 | DATA STORAGE SYSTEM VOLUME MATRIX | EMC Corporation |
| 11237628 | 7584338 | REPLICATION OF DEDUPLICATED STORAGE SYSTEM | EMC Corporation |
| 11238283 | 7405942 | MODULE INSERTION/EXTRACTION DEVICE | EMC Corporation |
| 11238284 | 7134902 | POWER CORD RETAINER | EMC Corporation |
| 11238350 | 7621460 | DATA STORAGE SYSTEM HAVING COOLING FAN SPEED PROTECTION | EMC Corporation |
| 11238352 | 7307832 | CHASSIS COVER WITH AIR FLOW CONTROL FLAPS | EMC Corporation |
| 11238475 | 7509535 | SYSTEM AND METHOD FOR MANAGING FAILOVER IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 11238512 | 7370235 | SYSTEM AND METHOD FOR MANAGING AND SCHEDULING RECOVERY AFTER A FAILURE IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 11238548 | 7574542 | SAS EXPANSION TOPOLOGY FOR RAID DATA STORAGE INCLUDING MULTIPLEXERS AND SAS EXPANDERS FOR INTERFACING WITH SINGLE OR DUAL PORTS DRIVES | EMC Corporation |
| 11238561 | 7401251 | ARCHITECTURE FOR MANAGING FAILOVER AND RECOVERY AFTER FAILOVER IN A DATA STORAGE ENVIRONMENT | EMC Corporation |

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| 11238563 | 7377800 | RAID DATA STORAGE SYSTEM HAVING KEYED SAS EXPANSION CABLES | EMC Corporation |
| 11238600 | 7627005 | MULTIPLEXING SYSTEM | EMC Corporation |
| 11238601 | 7624206 | RAID DATA STORAGE SYSTEM WITH SAS EXPANSION | EMC Corporation |
| 11238604 | 8072883 | INTERNET SMALL COMPUTER SYSTEMS INTERFACE (ISCSI) DISTANCE ACCELERATION DEVICE | EMC Corporation |
| 11239037 | 8086760 | MANAGING COMMUNICATIONS CONNECTIONS WITH DATA STORAGE SYSTEMS | EMC Corporation |
| 11239568 | 7549002 | ENCLOSURE NUMBERING IN RAID DATA STORAGE SYSTEMS | EMC Corporation |
| 11239776 | 7810094 | DISTRIBUTED TASK SCHEDULING FOR SYMMETRIC MULTIPROCESSING ENVIRONMENTS | EMC Corporation |
| 11239801 | 7571333 | METHOD AND SYSTEM FOR AUTOMATICALLY SETTING THE OPERATING VOLTAGE AND SPEED OF DIPLEX COMMUNICATION IN A DATA STORAGE SYSTEM | EMC Corporation |
| 11240003 | 7680905 | METHODS AND SYSTEM FOR VIEWING SAN RESOURCES | EMC Corporation |
| 11240164 | 7587483 | SYSTEM AND METHOD FOR MANAGING COMPUTER NETWORKS | EMC Corporation |
| 11241053 | 7805416 | FILE SYSTEM QUERY AND METHOD OF USE | EMC Corporation |
| 11241054 | 8135763 | APPARATUS AND METHOD FOR MAINTAINING A FILE SYSTEM INDEX | EMC Corporation |
| 11241132 | 7783615 | APPARATUS AND METHOD FOR BUILDING A FILE SYSTEM INDEX | EMC Corporation |
| 11241146 | 7536484 | SYSTEM FOR SETTING THE OPERATING VOLTAGE OF DISK ARRAY ENCLOSURES IN A DATA STORAGE DEVICE | EMC Corporation |
| 11241165 | 8072987 | FULL ARRAY NON-DISRUPTIVE DATA MIGRATION | EMC Corporation |
| 11241166 | 7386666 | GLOBAL SPARING OF STORAGE CAPACITY ACROSS MULTIPLE STORAGE ARRAYS | EMC Corporation |
| 11241167 | 7954034 | METHOD OF AND SYSTEM FOR PROTECTING DATA DURING CONVERSION FROM AN ECC PROTECTION SCHEME TO A PARITY PROTECTION SCHEME | EMC Corporation |
| 11241338 | 7464132 | METHOD AND APPARATUS FOR REFERENCE MODEL CHANGE GENERATION IN MANAGED SYSTEMS | EMC Corporation |
| 11242179 | 7627609 | INDEX PROCESSING USING TRANSFORMED VALUES | EMC Corporation |
| 11242218 | 7698325 | INDEX PROCESSING FOR LEGACY SYSTEMS | EMC Corporation |
| 11242514 | 7752211 | ADAPTIVE INDEX PROCESSING | EMC Corporation |
| 11244978 | 7451175 | SYSTEM AND METHOD FOR MANAGING COMPUTER NETWORKS | EMC Corporation |
| 11251618 | 7870103 | TOLERATING AND REPORTING COLLISIONS IN CONTENT-DERIVED IDENTIFIERS OF DATA SEGMENTS USING SECONDARY IDENTIFIERS | EMC Corporation |
| 11251627 | 7624335 | VERIFYING A FILE IN A SYSTEM WITH DUPLICATE SEGMENT ELIMINATION USING SEGMENTION-INDEPENDENT CHECKSUMS | EMC Corporation |
| 11254089 | 7558919 | DYNAMIC CACHE PARTITIONING | EMC Corporation |

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| 11255337 | 7917474 | SYSTEMS AND METHODS FOR ACCESSING AND UPDATING DISTRIBUTED DATA | EMC Corporation |
| 11255346 | 7346720 | SYSTEMS AND METHODS FOR MANAGING CONCURRENT ACCESS REQUESTS TO A SHARED RESOURCE | EMC Corporation |
| 11255817 | 7788303 | SYSTEMS AND METHODS FOR DISTRIBUTED SYSTEM SCANNING | EMC Corporation |
| 11255818 | 7797283 | SYSTEMS AND METHODS FOR MAINTAINING DISTRIBUTED DATA | EMC Corporation |
| 11256317 | 7386675 | SYSTEMS AND METHODS FOR USING EXCITEMENT VALUES TO PRE3DICT FUTURE ACCESS TO RESOURCES | EMC Corporation |
| 11256410 | 7551572 | SYSTEMS AND METHODS FOR PROVIDING VARIABLE PROTECTION | EMC Corporation |
| 11262306 | 8055711 | NON-BLOCKING COMMIT PROTOCOL SYSTEMS AND METHODS | EMC Corporation |
| 11262308 | 8051425 | DISTRIBUTED SYSTEM WITH ASYNCHRONOUS EXECUTION SYSTEMS AND METHODS | EMC Corporation |
| 11262314 | 8238350 | MESSAGE BATCHING WITH CHECKPOINTS SYSTEMS AND METHODS | EMC Corporation |
| 11265510 | 7502467 | SYSTEM AND METHOD FOR AUTHENTICATION SEED DISTRIBUTION | EMC Corporation |
| 11265539 | 7739733 | STORING DIGITAL SECRETS IN A VAULT | EMC Corporation |
| 11273279 | 7634601 | METHOD AND APPARATUS FOR PROVIDING CONTINUOUS COMMUNICATION BETWEEN COMPUTERS | EMC Corporation |
| 11276929 | 7358752 | SIGNAL LAUNCH FOR HIGH SPEED DIFFERENTIAL SIGNALS | EMC Corporation |
| 11277790 | | COMBINED CONTENT INDEXING AND DATA REDUCTION | EMC Corporation |
| 11277958 | 7600070 | DISK DRIVE PACKAGING ENCLOSURE | EMC Corporation |
| 11278152 | 7821922 | FAULT ISOLATION AND HANDLING IN A PACKET SWITCHING NETWORK | EMC Corporation |
| 11278157 | 8554943 | METHOD AND SYSTEM FOR REDUCING PACKET LATENCY IN NETWORKS WITH BOTH LOW LATENCY AND HIGH BANDWIDTHS REQUIREMENTS | EMC Corporation |
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| 11281157 | 7770228 | CONTENT ADDRESSABLE INFORMATION ENCAPSULATION, REPRESENTATION, AND TRANSFER | EMC Corporation |
| 11283447 | 7187547 | TECHNIQUES FOR COOLING A SET OF CIRCUIT BOARDS WITHIN A RACK MOUNT CABINET | EMC Corporation |
| 11286168 | 7539824 | POOLING AND PROVISIONING STORAGE RESOURCES IN A STORAGE NETWORK | EMC Corporation |
| 11287106 | 7343429 | SCALABLE COMMUNICATION WITHIN A DISTRIBUTED SYSTEM USING DYNAMIC COMMUNICATION TREES | EMC Corporation |
| 11288578 | 7765187 | REPLICATION OF A CONSISTENCY GROUP OF DATA STORAGE OBJECTS FROM SERVERS IN A DATA NETWORK | EMC Corporation |
| 11290971 | 7647624 | TECHNIQUES FOR PRESERVING AND MANAGING IDENTITIES IN AN AUDIT LOG | EMC Corporation |

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| 11301975 | 8549252 | FILE BASED VOLUMES AND FILE SYSTEMS | EMC Corporation |
| 11303602 | 7409667 | TECHNIQUES FOR MODELING A CIRCUIT BOARD STRUCTURE | EMC Corporation |
| 11303752 | 8060922 | CONSUMER INTERNET AUTHENTICATION DEVICE | EMC Corporation |
| 11305308 | 7454579 | MANAGING ACCESS TO SHARED RESOURCES | EMC Corporation |
| 11311565 | 7697391 | MASSIVELY MULTI-LEVEL OPTICAL DATA STORAGE USING SUBWAVELENGTH SIZED NANO-GRATING STRUCTURES | EMC Corporation |
| 11318675 | 7500134 | VIRTUAL ARRAY FAILOVER | EMC Corporation |
| 11318719 | 7697515 | ON-LINE DATA MIGRATION OF A LOGICAL/VIRTUAL STORAGE ARRAY | EMC Corporation |
| 11318734 | 7697554 | ON-LINE DATA MIGRATION OF A LOGICAL/VIRTUAL STORAGE ARRAY BY REPLACING VIRTUAL NAMES | EMC Corporation |
| 11318756 | 8107467 | FULL ARRAY NON-DISRUPTIVE FAILOVER | EMC Corporation |
| 11318757 | 9348530 | PRESENTATION OF VIRTUAL ARRAYS USING N-PORT ID VIRTUALIZATION | EMC Corporation |
| 11321066 | 7693889 | AUTOMATED BACKUP AND RECOVERY FOR CONTENT REPOSITORY | EMC Corporation |
| 11322174 | 8832705 | ORDERED MUTUAL EXCLUSION | EMC Corporation |
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| 11323483 | 7653624 | FILE SYSTEM CHANGE TRACKING | EMC Corporation |
| 11324017 | 7974952 | TRACKING FILE SYSTEM CHANGES FOR BACKUP | EMC Corporation |
| 11324351 | 7581044 | DATA TRANSMISSION METHOD AND SYSTEM USING CREDITS, A PLURALITY OF BUFFERS AND A PLURALITY OF CREDIT BUSES | EMC Corporation |
| 11324352 | 7675929 | METHOD AND SYSTEM FOR MANAGING DATA FLOW IN A DATA TRANSMISSION SYSTEM | EMC Corporation |
| 11324354 | 7388749 | SUPPORT CARRIER FOR A DISK-DRIVE WITH INTEGRATED HEAT-SINK | EMC Corporation |
| 11324418 | 7634617 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR OPTIMIZED COPYING OF LOGICAL UNITS (LUNS) IN A REDUNDANT ARRAY OF INEXPENSIVE DISKS (RAID) ENVIRONMENT USING BUFFERS THAT ARE LARGER THAN LUN DELTA MAP CHUNKS | EMC Corporation |
| 11324452 | 7441078 | MANAGING DISK DRIVE STATUS | EMC Corporation |
| 11324461 | 7627873 | SYSTEM AND METHOD FOR HANDLING DEVICE OBJECTS IN A DATA STORAGE ENVIRONMENT FOR MAINTAINING CONSISTENCY DURING DATA REPLICATION | EMC Corporation |
| 11324530 | 7784049 | SYSTEM AND METHOD FOR PROVIDING A PLURALITY OF VIRTUAL COMPUTING ENVIRONMENTS THAT EFFICIENTLY USE DATA IN THE VIRTUAL ENVIRONMENTS | EMC Corporation |
| 11324553 | 7574560 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR DYNAMIC MAPPING OF LOGICAL UNITS IN A REDUNDANT ARRAY OF INEXPENSIVE DISKS (RAID) ENVIRONMENT | EMC Corporation |
| 11324593 | 7574445 | GENERATING A SELECTION REPRESENTATION FOR ITEMS IN TREE STRUCTURES | EMC Corporation |

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| 11324642 | 8095542 | METHODS AND APPARATUS FOR ALLOWING ACCESS TO CONTENT | EMC Corporation |
| 11324646 | 7539838 | METHODS AND APPARATUS FOR INCREASING THE STORAGE CAPACITY OF A STORAGE SYSTEM | EMC Corporation |
| 11324666 | 7325084 | MESSAGES SIGNALING INTERRUPT (MSI) PROCESSING SYSTEM | EMC Corporation |
| 11324667 | 7398343 | INTERRUPT PROCESSING SYSTEM | EMC Corporation |
| 11324695 | 7328296 | INTERRUPT PROCESSING SYSTEM | EMC Corporation |
| 11324721 | 7634618 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR OPTIMIZED COPYING OF LOGICAL UNITS (LUNS) IN A REDUNDANT ARRAY OF INEXPENSIVE DISKS (RAID) ENVIRONMENT USING BUFFERS THAT ARE SMALLER THAN LUN DELTA MAP CHUNKS | EMC Corporation |
| 11324726 | 7958101 | METHODS AND APPARATUS FOR MOUNTING A FILE SYSTEM | EMC Corporation |
| 11324728 | 7529972 | METHODS AND APPARATUS FOR RECONFIGURING A STORAGE SYSTEM | EMC Corporation |
| 11324740 | 7664125 | INDICATION FORWARDING IN A DISTRIBUTED ENVIRONMENT | EMC Corporation |
| 11324750 | 8015235 | GROUP SERVICES | EMC Corporation |
| 11324751 | 8631114 | INFORMATION ROLL-UP IN DISTRIBUTED ENVIRONMENTS | EMC Corporation |
| 11324766 | 8046545 | CONTINUOUS BACKUP | EMC Corporation |
| 11324785 | 8892750 | TRANSPARENT HBA REPLACEMENT | EMC Corporation |
| 11324786 | 8185639 | SERVER IDENTIFICATION IN STORAGE NETWORKS | EMC Corporation |
| 11324839 | 7609651 | METHODS AND SYSTEMS FOR MAINTAINING CONFIGURATION INFORMATION | EMC Corporation |
| 11324841 | 8032621 | METHODS AND APPARATUS PROVIDING ROOT CAUSE ANALYSIS ON ALERTS | EMC Corporation |
| 11324842 | 7895520 | METHODS AND APPARATUS FOR MANAGING SCHEDULED ACTIVITIES IN A STORAGE AREA NETWORK | EMC Corporation |
| 11324843 | 7596572 | METHODS AND APPARATUS PROVIDING A CATEGORICAL APPROACH TO VALUETYPE BRIDGE SUPPORT | EMC Corporation |
| 11324844 | 7606811 | METHODS AND APPARATUS FOR SYNCHRONIZING INFORMATION | EMC Corporation |
| 11324970 | 7182623 | LEVER-AND-SPRING ASSEMBLY FOR AN ELECTRONICS MODULE | EMC Corporation |
| 11324973 | 7447834 | MANAGING SERIAL ATTACHED SMALL COMPUTER SYSTEMS INTERFACE COMMUNICATIONS | EMC Corporation |
| 11324974 | 7315449 | APPARATUS FOR SUPPORTING A HEATSINK | EMC Corporation |
| 11324975 | 7552279 | SYSTEM AND METHOD FOR MULTIPLE VIRTUAL COMPUTING ENVIRONMENTS IN DATA STORAGE ENVIRONMENT | EMC Corporation |
| 11324984 | 7440215 | MANAGING DISK DRIVE SPIN UP | EMC Corporation |
| 11324989 | 7996848 | SYSTEMS AND METHODS FOR SUSPENDING AND RESUMING THREADS | EMC Corporation |
| 11324992 | 7751407 | SETTING A CEILING FOR BANDWIDTH USED BY BACKGROUND TASKS IN A SHARED PORT ENVIRONMENT | EMC Corporation |

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| 11325001 | 7574540 | MANAGING MANAGEMENT CONTROLLER COMMUNICATIONS | EMC Corporation |
| 11325078 | 8677087 | CONTINUOUS BACKUP TO A REMOTE STORAGE DEVICE | EMC Corporation |
| 11325108 | | METHOD AND APPARATUS FOR REPRESENTING, MANAGING AND PROBLEM REPORTING IN RFID NETWORKS | EMC Corporation |
| 11325109 | 7797420 | METHOD AND APPARATUS FOR REPRESENTING, MANAGING AND PROBLEM REPORTING IN VOIP NETWORKS | EMC Corporation |
| 11325144 | 7512595 | METHODS AND SYSTEMS FOR UTILIZING CONFIGURATION INFORMATION | EMC Corporation |
| 11325146 | 7739688 | TECHNIQUES FOR MANAGING DISTRIBUTION OF WELL-DEFINED OBJECTS IN A CLIENT/SERVER SYSTEM | EMC Corporation |
| 11325172 | 7788677 | METHODS AND APPARATUS PROVIDING A CATEGORICAL APPROACH TO STRONGLY TYPED COMPONENT MANAGEMENT | EMC Corporation |
| 11325228 | 7631143 | DATA STORAGE SYSTEM EMPLOYING VIRTUAL DISK ENCLOSURE | EMC Corporation |
| 11325285 | 9064046 | USING CORRELATED STACK TRACES TO DETERMINE FAULTS IN CLIENT/SERVER SOFTWARE | EMC Corporation |
| 11325286 | 7849469 | SYSTEM AND METHODS FOR GENERIC INSTALLATION PREREQUISITE VERIFICATION | EMC Corporation |
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| 11325494 | 7634496 | TECHNIQUES FOR MANAGING STATE CHANGES OF A DATA STORAGE SYSTEM UTILIZING THE OBJECT ORIENTED PARADIGM | EMC Corporation |
| 11325689 | 7526495 | REAL-TIME CONSTRUCTION OF A SELECTION REPRESENTATION FOR ITEMS IN TREE STRUCTURES | EMC Corporation |
| 11325914 | 7715378 | ERROR NOTIFICATION AND FORCED RETRY IN A DATA STORAGE SYSTEM | EMC Corporation |
| 11326035 | 9268659 | DETECTING FAILOVER IN A DATABASE MIRRORING ENVIRONMENT | EMC Corporation |
| 11327961 | 7197616 | VIRTUAL ORDERED WRITES | EMC Corporation |
| 11336461 | 7254515 | METHOD AND APPARATUS FOR SYSTEM MANAGEMENT USING CODEBOOK CORRELATION WITH SYMPTOM EXCLUSION | EMC Corporation |
| 11341353 | 8560569 | METHOD AND APPARATUS FOR PERFORMING BULK FILE SYSTEM ATTRIBUTE RETRIEVAL | EMC Corporation |
| 11343012 | 8150936 | METHODS AND APPARATUS TO MANAGE SHADOW COPY PROVIDERS | EMC Corporation |
| 11343152 | 8914596 | VIRTUAL ORDERED WRITES FOR MULTIPLE STORAGE DEVICES | EMC Corporation |
| 11343313 | 8170985 | PRIMARY STUB FILE RETENTION AND SECONDARY RETENTION COORDINATION IN A HIERARCHICAL STORAGE SYSTEM | EMC Corporation |
| 11345816 | 8341127 | CLIENT INITIATED RESTORE | EMC Corporation |
| 11345859 | 8886902 | DISK BACKUP SET ACCESS | EMC Corporation |
| 11346005 | 7913044 | EFFICIENT INCREMENTAL BACKUPS USING A CHANGE DATABASE | EMC Corporation |

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| 11346898 | 8015441 | IMPROVED VERIFICATION OF COMPUTER BACKUP DATA | EMC Corporation |
| 11347117 | 8042172 | REMOTE ACCESS ARCHITECTURE ENABLING A CLIENT TO PERFORM AN OPERATION | EMC Corporation |
| 11347124 | 7890746 | AUTOMATIC AUTHENTICATION OF BACKUP CLIENTS | EMC Corporation |
| 11347758 | 7966513 | AUTOMATIC CLASSIFICATION OF BACKUP CLIENTS | EMC Corporation |
| 11347759 | 7421551 | FAST VERIFICATION OF COMPUTER BACKUP DATA | EMC Corporation |
| 11348982 | 7822717 | POINT-IN-TIME DATABASE RESTORE | EMC Corporation |
| 11353360 | 7346636 | METHOD AND APPARATUS FOR MANAGING INFORMATION RELATED TO STORAGE ACTIVITIES OF DATA STORAGE SYSTEMS | EMC Corporation |
| 11354730 | 7490072 | ROLE BASED ACCESS CONTROLS | EMC Corporation |
| 11355097 | 8214398 | ROLE BASED ACCESS CONTROLS | EMC Corporation |
| 11355286 | 7647639 | METHODS FOR DETECTING EXECUTABLE CODE WHICH HAS BEEN ALTERED | EMC Corporation |
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| 11357724 | 8370638 | DERIVATIVE SEEDS | EMC Corporation |
| 11357740 | 7848261 | SYSTEMS AND METHODS FOR PROVIDING A QUIESCING PROTOCOL | EMC Corporation |
| 11360270 | 7624155 | DATA REPLICATION FACILITY FOR DISTRIBUTED COMPUTING ENVIRONMENTS | EMC Corporation |
| 11361907 | 7516348 | SELECTIVE POWER MANAGEMENT OF DISK DRIVES DURING SEMI-IDLE TIME IN ORDER TO SAVE POWER AND INCREASE DRIVE LIFE SPAN | EMC Corporation |
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| 11365261 | 7529777 | CROSS-OBJECT ATTRIBUTE RESTORATION | EMC Corporation |
| 11369488 | 8528057 | METHOD AND APPARATUS FOR ACCOUNT VIRTUALIZATION | EMC Corporation |
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| 11372651 | 7788537 | TECHNIQUES FOR COLLECTING CRITICAL INFORMATION FROM A MEMORY DUMP | EMC Corporation |
| 11376355 | 7830770 | TECHNIQUES FOR STORING AND RETRIEVING DATA USING A SPHERE-SHAPED DATA STORAGE STRUCTURE | EMC Corporation |
| 11377129 | 7264497 | METHOD AND APPARATUS FOR RETAINING A POWER CORD | EMC Corporation |
| 11378722 | 7421552 | TECHNIQUES FOR MANAGING DATA WITHIN A DATA STORAGE SYSTEM UTILIZING A FLASH-BASED MEMORY VAULT | EMC Corporation |
| 11380082 | 7605815 | SELECTION REPRESENTATION METHODS APPLIED TO LOGICAL GROUPINGS | EMC Corporation |
| 11381336 | 7689597 | MIRRORED STORAGE ARCHITECTURE USING CONTINUOUS DATA PROTECTION TECHNIQUES | EMC Corporation |

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| 11381339 | 7765190 | PSEUDOSNAPSHOT CREATION AND IMPLEMENTATION USING CONTINUOUS DATA PROTECTION | EMC Corporation |
| 11381345 | 7509358 | PERFORMING REPLICATION OPERATIONS ON CONTINUOUS DATA PROTECTION SYSTEMS USING PSEUDOSNAPSHOTS | EMC Corporation |
| 11382075 | 7945726 | PRE-ALLOCATION AND HIERARCHICAL MAPPING OF DATA BLOCKS DISTRIBUTED FROM A FIRST PROCESSOR TO A SECOND PROCESSOR FOR USE IN A FILE SYSTEM | EMC Corporation |
| 11382193 | 7676514 | DISTRIBUTED MAINTENANCE OF SNAPSHOT COPIES BY A PRIMARY PROCESSOR MANAGING METADATA AND A SECONDARY PROCESSOR PROVIDING READ-WRITE ACCESS TO A PRODUCTION DATASET | EMC Corporation |
| 11382233 | 7653832 | STORAGE ARRAY VIRTUALIZATION USING A STORAGE BLOCK MAPPING PROTOCOL CLIENT AND SERVER | EMC Corporation |
| 11382464 | 7546432 | PASS-THROUGH WRITE POLICIES OF FILES IN DISTRIBUTED STORAGE MANAGEMENT | EMC Corporation |
| 11384756 | 8825882 | METHOD AND APPARATUS FOR IMPLEMENTING HIGH-PERFORMANCE, SCALEABLE DATA PROCESSING AND STORAGE SYSTEMS | EMC Corporation |
| 11386029 | 7383373 | DERIVING CORRESPONDING SIGNALS | EMC Corporation |
| 11386884 | 7552125 | SYNERGISTIC DATA STRUCTURES | EMC Corporation |
| 11387129 | 7603529 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR MAPPED LOGICAL UNIT (MLU) REPLICATIONS, STORAGE, AND RETRIEVAL IN A REDUNDANT ARRAY OF INEXPENSIVE DISKS (RAID) ENVIRONMENT | EMC Corporation |
| 11387426 | 7585005 | LOCKING MECHANISM FOR SECURING BEZELS | EMC Corporation |
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| 11389786 | 8095937 | METHODS AND APPARATUS PROVIDING PAYLOAD EVENT PROCESSING FOR MANAGED OBJECTS | EMC Corporation |
| 11389800 | 7211739 | ELECTROMAGNETIC INTERFERENCE (EMI) SHIELD FOR A CABLE-BULKHEAD INTERFACE | EMC Corporation |
| 11390899 | 7849176 | METHODS AND APPARATUS FOR RENDERING MESSAGES | EMC Corporation |
| 11390900 | 7577724 | METHODS AND APPARATUS ASSOCIATED WITH ADVISORY GENERATION | EMC Corporation |
| 11391012 | 7496551 | METHODS AND APPARATUS ASSOCIATED WITH ADVISORY GENERATION | EMC Corporation |
| 11391104 | 7913108 | SYSTEM AND METHOD FOR IMPROVING DISK DRIVE PERFORMANCE DURING HIGH FREQUENCY VIBRATION CONDITIONS | EMC Corporation |
| 11391106 | 7814196 | METHODS AND APPARATUS FOR MAPPING RESOURCES | EMC Corporation |
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| 11391704 | 8132266 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR IDENTIFYING AND ENFORCING SOFTWARE FEATURE LIMITS ACROSS DIFFERENT HARDWARE PLATFORMS, SOFTWARE RELEASES, AND TIERS | EMC Corporation |
| 11391770 | 7519504 | METHOD AND APPARATUS FOR REPRESENTING, MANAGING AND PROBLEM REPORTING IN SURVEILLANCE NETWORKS | EMC Corporation |
| 11391935 | 7475203 | METHODS AND SYSTEMS FOR ENABLING NON-DESTRUCTIVE ERASURE OF DATA | EMC Corporation |
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| 11393063 | 7409525 | IMPLICIT LOCKS IN A SHARED VIRTUAL MEMORY SYSTEM | EMC Corporation |
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| 11393110 | 9026679 | METHODS AND APPARATUS FOR PERSISTING MANAGEMENT INFORMATION CHANGES | EMC Corporation |
| 11393111 | 7899780 | METHODS AND APPARATUS FOR STRUCTURED PARTITIONING OF MANAGEMENT INFORMATION | EMC Corporation |
| 11393137 | 7694119 | TECHNIQUES FOR DEVICE INITIALIZATION | EMC Corporation |
| 11393174 | 7680987 | SUB-PAGE-GRANULAR CACHE COHERENCY USING SHARED VIRTUAL MEMORY MECHANISM | EMC Corporation |
| 11393185 | 7711711 | NETWORKED STORAGE SYSTEM EMPLOYING INFORMATION LIFECYCLE MANAGEMENT IN CONJUNCTION WITH A DISTRIBUTED GLOBAL FILE SYSTEM | EMC Corporation |
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| 11393216 | 7512578 | SMART CONTAINERS | EMC Corporation |
| 11393217 | 7962464 | FEDERATED SEARCH | EMC Corporation |
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| 11393236 | 8230384 | TECHNIQUES FOR GENERATING AND PROCESSING A SCHEMA INSTANCE | EMC Corporation |
| 11393338 | 7214888 | ADAPTIVE ELECTROMAGNETIC INTERFERENCE-RADIO FREQUENCY INTERFERENCE (EMI/RFI) SHIELD EXTENSION | EMC Corporation |
| 11393339 | 7258569 | CONNECTOR-ALIGNMENT COLLAR FOR BLIND MATING ELECTRICAL CONNECTORS | EMC Corporation |
| 11393396 | 7930727 | SYSTEM AND METHOD FOR MEASURING AND ENFORCING SECURITY POLICY COMPLIANCE FOR SOFTWARE DURING THE DEVELOPMENT PROCESS OF THE SOFTWARE | EMC Corporation |
| 11393438 | 7774645 | TECHNIQUES FOR MIRRORING DATA WITHIN A SHARED VIRTUAL MEMORY SYSTEM | EMC Corporation |
| 11393467 | 7536507 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR PRESERVING ATOMIC WRITES USING LEAVES AND BITMAPS | EMC Corporation |
| 11393545 | 8635594 | SCRIPT LANGUAGE FOR STORAGE MANAGEMENT OPERATIONS | EMC Corporation |
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| 11393638 | 7529887 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR POSTPONING BITMAP TRANSFERS AND ELIMINATING CONFIGURATION INFORMATION TRANSFERS DURING TRESPASS OPERATIONS IN A DISK ARRAY ENVIRONMENT | EMC Corporation |
| 11393641 | 7681011 | METHODS AND APPARATUS FOR PARTITIONING MANAGEMENT INFORMATION | EMC Corporation |
| 11394536 | 7873835 | ACCESSING DATA STORAGE DEVICES | EMC Corporation |
| 11394651 | 7681130 | METHODS AND APPARATUS FOR DISPLAYING NETWORK DATA | EMC Corporation |
| 11394665 | 7647525 | RESUMPTION OF OPERATIONS FOLLOWING FAILOVER IN CONNECTION WITH TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |
| 11394666 | 7620612 | PERFORMING MODEL-BASED ROOT CAUSE ANALYSIS USING INTER-DOMAIN MAPPINGS | EMC Corporation |
| 11394698 | 7852781 | MANAGING COMMUNICATIONS SETTINGS | EMC Corporation |
| 11394700 | 7676694 | MANAGING SYSTEM COMPONENTS | EMC Corporation |
| 11394701 | 7904909 | ARCHITECTURE FOR USING A MODEL-BASED APPROACH FOR MANAGING RESOURCES IN A NETWORKED ENVIRONMENT | EMC Corporation |
| 11394768 | 7676628 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR PROVIDING ACCESS TO SHARED STORAGE BY COMPUTING GRIDS AND CLUSTERS WITH LARGE NUMBERS OF NODES | EMC Corporation |
| 11394919 | 7502992 | METHOD AND APPARATUS FOR DETECTING THE PRESENCE OF ERRORS IN DATA TRANSMITTED BETWEEN COMPONENTS IN A DATA STORAGE SYSTEM USING AN I2C PROTOCOL | EMC Corporation |
| 11394943 | 8089903 | METHOD AND APPARATUS FOR PROVIDING A LOGICAL SEPARATION OF A CUSTOMER DEVICE AND A SERVICE DEVICE CONNECTED TO A DATA STORAGE SYSTEM | EMC Corporation |
| 11395427 | 7792857 | MIGRATION OF CONTENT WHEN ACCESSED USING FEDERATED SEARCH | EMC Corporation |
| 11395429 | 8285827 | METHOD AND APPARATUS FOR RESOURCE MANAGEMENT WITH A MODEL-BASED ARCHITECTURE | EMC Corporation |
| 11395441 | 7854006 | DIFFERENTIAL VIRUS SCAN | EMC Corporation |
| 11395456 | 7792045 | METHOD AND APPARATUS FOR CONFIGURATION AND ANALYSIS OF INTERNAL NETWORK ROUTING PROTOCOLS | EMC Corporation |
| 11395460 | 7279856 | ENVIRONMENTAL AND HEALTH MONITORING CIRCUITRY FOR STORAGE PROCESSOR I/O ANNEX MODULE | EMC Corporation |
| 11395621 | 7752340 | ATOMIC COMMAND RETRY IN A DATA STORAGE SYSTEM | EMC Corporation |
| 11395635 | 7613890 | CONSISTENT REPLICATION ACROSS MULTIPLE STORAGE DEVICES | EMC Corporation |
| 11395755 | 8205261 | INCREMENTAL VIRUS SCAN | EMC Corporation |
| 11396280 | 7953905 | METHODS AND APPARATUS FOR MODELING A STORAGE AREA NETWORK | EMC Corporation |
| 11396282 | 7756898 | SYSTEMS AND METHODS FOR NOTIFYING LISTENERS OF EVENTS | EMC Corporation |

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| 11396336 | 7430646 | PLANNED SWITCHOVER IN CONNECTION WITH TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |
| 11397025 | 8843783 | FAILOVER TO SYNCHRONOUS BACKUP SITE IN CONNECTION WITH TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |
| 11401047 | 7423830 | DETECTING HEAD/DISK CONTACT IN A DISK DRIVE USING A CALIBRATION PARAMETER | EMC Corporation |
| 11402631 | 7562186 | EFFICIENT DATA STORAGE USING RESEMBLANCE OF DATA SEGMENTS | EMC Corporation |
| 11403146 | 7949824 | EFFICIENT DATA STORAGE USING TWO LEVEL DELTA RESEMBLANCE | EMC Corporation |
| 11403154 | 7844652 | EFFICIENT COMPUTATION OF SKETCHES | EMC Corporation |
| 11406849 | 7502960 | METHOD AND APPARATUS FOR MANAGING ACCESS TO VOLUMES OF STORAGE | EMC Corporation |
| 11409304 | 7444420 | APPARATUS AND METHOD FOR MIRRORING AND RESTORING DATA | EMC Corporation |
| 11418363 | 7507104 | MATING FOR SINGLE CONNECTOR ATTACHMENT (SCA) DISK CONNECTORS | EMC Corporation |
| 11424427 | 7831837 | ENCODING TOKEN COMMANDS/DATA WITHIN DATA STREAMS FOR STANDARD INTERFACES | EMC Corporation |
| 11426071 | 8307359 | EMBEDDED VIRTUAL STORAGE AREA NETWORK USING A VIRTUAL BLOCK NETWORK FABRIC | EMC Corporation |
| 11426641 | 8185751 | ACHIEVING STRONG CRYPTOGRAPHIC CORRELATION BETWEEN HIGHER LEVEL SEMANTIC UNITS AND LOWER LEVEL COMPONENTS IN A SECURE DATA STORAGE SYSTEM | EMC Corporation |
| 11426645 | 8176319 | IDENTIFYING AND ENFORCING STRICT FILE CONFIDENTIALITY IN THE PRESENCE OF SYSTEM AND STORAGE ADMINISTRATORS IN A NAS SYSTEM | EMC Corporation |
| 11427074 | 8417747 | VIRTUALLY PROVISIONED VOLUME RECOVERY | EMC Corporation |
| 11427082 | 7552280 | ASYMMETRICALLY INTERLEAVING ACCESS TO REDUNDANT STORAGE DEVICES | EMC Corporation |
| 11427140 | 7425026 | SEISMIC-RESISTANT EQUIPMENT CABINETS AND DOOR LATCHES | EMC Corporation |
| 11427208 | 7385472 | MULTI-LEVEL PRINTED CIRCUIT BOARD INTERSTITIAL VIAS | EMC Corporation |
| 11427526 | 7509461 | METHOD AND APPARATUS FOR INTELLIGENT BUFFER CACHE PRE-EMPTION | EMC Corporation |
| 11427584 | 8078585 | REACTIVE FILE RECOVERY BASED ON FILE NAMING AND ACCESS INFORMATION | EMC Corporation |
| 11427585 | 7519769 | SCALABLE STORAGE NETWORK VIRTUALIZATION | EMC Corporation |
| 11427646 | 7685395 | SPANNING VIRTUAL ARRAYS ACROSS MULTIPLE PHYSICAL STORAGE ARRAYS | EMC Corporation |
| 11427664 | 8589504 | FULL ARRAY NON-DISRUPTIVE MANAGEMENT DATA MIGRATION | EMC Corporation |
| 11427677 | 7484056 | PARTITIONING OF A STORAGE ARRAY INTO N-STORAGE ARRAYS USING FULL ARRAY NON-DISRUPTIVE DATA MIGRATION | EMC Corporation |
| 11427685 | 7484057 | CONSOLIDATING N-STORAGE ARRAYS INTO ONE STORAGE ARRAY USING FULL ARRAY NON-DISRUPTIVE DATA MIGRATION | EMC Corporation |

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| 11427699 | 7484059 | FULL ARRAY NON-DISRUPTIVE MIGRATION OF EXTENDED STORAGE FUNCTIONALITY | EMC Corporation |
| 11427724 | 7757059 | VIRTUAL ARRAY NON-DISRUPTIVE MANAGEMENT DATA MIGRATION | EMC Corporation |
| 11427731 | 8539177 | PARTITIONING OF A STORAGE ARRAY INTO N-STORAGE ARRAYS USING VIRTUAL ARRAY NON-DISRUPTIVE DATA MIGRATION | EMC Corporation |
| 11427744 | 8533408 | CONSOLIDATING N-STORAGE ARRAYS INTO ONE STORAGE ARRAY USING VIRTUAL ARRAY NON-DISRUPTIVE DATA MIGRATION | EMC Corporation |
| 11427749 | 8452928 | VIRTUAL ARRAY NON-DISRUPTIVE MIGRATION OF EXTENDED STORAGE FUNCTIONALITY | EMC Corporation |
| 11427759 | 8583861 | PRESENTATION OF MANAGEMENT FUNCTIONALITY OF VIRTUAL ARRAYS | EMC Corporation |
| 11427889 | 7904681 | METHODS AND SYSTEMS FOR MIGRATING DATA WITH MINIMAL DISRUPTION | EMC Corporation |
| 11428117 | 7676689 | BROWSING AND SELECTING ITEMS IN RECOVERY STORAGE GROUPS TO PERFORM RECOVERY ONTO PRODUCTION SERVER | EMC Corporation |
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| 11430433 | | [REDACTED] | EMC Corporation |
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| 11431337 | 7369380 | HIGHLY AVAILABLE DUAL SERIAL BUS ARCHITECTURE | EMC Corporation |
| 11433961 | 7822974 | IMPLICIT TRUST OF AUTHORSHIP CERTIFICATION | EMC Corporation |
| 11438975 | 7281108 | METHOD AND APPARATUS FOR MIGRATING DATA IN A COMPUTER SYSTEM | EMC Corporation |
| 11439022 | | [REDACTED] | EMC Corporation |
| 11440964 | 7937369 | DATA MOVER DISCOVERY OF OBJECT EXTENT | EMC Corporation |
| 11441752 | | NETWORK EVENT CAPTURE AND RETENTION SYSTEM | EMC Corporation |
| 11441926 | | NETWORK EVENT CAPTURE AND RETENTION SYSTEM | EMC Corporation |
| 11441927 | | NETWORK EVENT CAPTURE AND RETENTION SYSTEM | EMC Corporation |
| 11442569 | | NETWORK EVENT CAPTURE AND RETENTION SYSTEM | EMC Corporation |
| 11443325 | 8676960 | NETWORK EVENT CAPTURE AND RETENTION SYSTEM | EMC Corporation |
| 11444566 | 8406421 | METHOD AND SYSTEM FOR MULTI-LEVEL SECURE PERSONAL PROFILE MANAGEMENT AND ACCESS CONTROL TO THE ENTERPRISE MULTI-MODAL COMMUNICATION ENVIRONMENT IN HETEROGENEOUS CONVERGENT COMMUNICATION NETWORKS | EMC Corporation |
| 11448524 | 8112396 | BACKUP AND RECOVERY OF INTEGRATED LINKED DATABASES | EMC Corporation |
| 11449104 | | METHOD AND APPARATUS FOR PROCESSING A DATABASE REPLICA | EMC Corporation |
| 11449153 | 8140623 | NON-BLOCKING COMMIT PROTOCOL SYSTEMS AND METHODS | EMC Corporation |

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| 11449163 | | METHOD AND APPARATUS FOR PROCESSING A DATABASE REPLICA | EMC Corporation |
| 11452458 | 8478952 | FLEXIBLE OPTIMIZED GROUP-BASED BACKUPS | EMC Corporation |
| 11454739 | 8085794 | TECHNIQUES FOR FAULT TOLERANT ROUTING IN A DESTINATION-ROUTED SWITCH FABRIC | EMC Corporation |
| 11457177 | 8028011 | GLOBAL UNIX FILE SYSTEM CYLINDER GROUP CACHE | EMC Corporation |
| 11465119 | 7620646 | REAL-TIME CONSTRUCTION OF A SELECTION REPRESENTATION FOR ITEMS IN TREE STRUCTURES | EMC Corporation |
| 11471761 | 7844681 | CLIENT/SERVER NETWORK FILE SHARING METHOD AND APPARATUS | EMC Corporation |
| 11472685 | 7571293 | EMULATION OF POINT-IN-TIME DATA COPYING OPERATIONS | EMC Corporation |
| 11473475 | 7577808 | EFFICIENT BACKUP DATA RETRIEVAL | EMC Corporation |
| 11473485 | 7694103 | EFFICIENT USE OF MEMORY AND ACCESSING OF STORED RECORDS | EMC Corporation |
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| 11473617 | 8533163 | DATABASE OFFLOAD PROCESSING | EMC Corporation |
| 11474192 | 7685463 | DISK DRIVE MANAGEMENT SYSTEM | EMC Corporation |
| 11474556 | 7502669 | APPARATUS AND METHOD FOR GRAPHICALLY DISPLAYING DISK DRIVE ENCLOSURES AND CABLING IN A DATA STORAGE SYSTEM | EMC Corporation |
| 11474635 | 7600088 | TECHNIQUES FOR PROVIDING STORAGE ARRAY SERVICES TO A CLUSTER OF NODES USING PORTAL DEVICES | EMC Corporation |
| 11474658 | 7627710 | CONVERTING AN OBJECT IDENTIFIER TO A BLOCK I/O ADDRESS TO IDENTIFY A STORAGE LOCATION ON A SERVER | EMC Corporation |
| 11474802 | 8429242 | METHODS AND APPARATUS FOR PROVIDING CONTENT | EMC Corporation |
| 11475060 | 7962567 | SYSTEMS AND METHODS FOR DISABLING AN ARRAY PORT FOR AN ENTERPRISE | EMC Corporation |
| 11475774 | 7779101 | METHOD AND APPARATUS FOR MAPPING AND IDENTIFYING THE ROOT CAUSES OF PERFORMANCE PROBLEMS IN NETWORK-BASED SERVICES | EMC Corporation |
| 11475775 | 8230051 | METHOD AND APPARATUS FOR MAPPING AND IDENTIFYING RESOURCES FOR NETWORK-BASED SERVICES | EMC Corporation |
| 11476380 | 7680831 | METHODS AND APPARATUS FOR DETECTION AND RECOVERY OF DATABASE OUT OF SYNCHRONIZATION CONDITIONS | EMC Corporation |
| 11476478 | 8386732 | METHODS AND APPARATUS FOR STORING COLLECTED NETWORK MANAGEMENT DATA | EMC Corporation |
| 11476521 | 7478099 | METHODS AND APPARATUS FOR COLLECTING DATABASE TRANSACTIONS | EMC Corporation |
| 11476523 | 7711705 | METHODS AND APPARATUS FOR PROCESSING PARTITIONED CHANGES | EMC Corporation |

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| 11476887 | 7315914 | SYSTEMS AND METHODS FOR MANAGING VIRTUALIZED LOGICAL UNITS USING VENDOR SPECIFIC STORAGE ARRAY COMMANDS LOGICAL UNITS USING VENDOR SPECIFIC STORAGE ARRAY COMMANDS | EMC Corporation |
| 11476951 | | [REDACTED] | EMC Corporation |
| 11476957 | 8868718 | METHOD AND APPARATUS FOR PROVIDING SCALABILITY IN RESOURCE MANAGEMENT AND ANALYSIS SYSTEMS | EMC Corporation |
| 11477022 | 7685368 | METHODS AND APPARATUS FOR REMOVING DATA FROM A CACHE | EMC Corporation |
| 11477026 | 7689565 | METHODS AND APPARATUS FOR SYNCHRONIZING NETWORK MANAGEMENT DATA | EMC Corporation |
| 11477058 | 8095966 | METHODS AND APPARATUS FOR PASSWORD MANAGEMENT | EMC Corporation |
| 11477215 | 8171098 | TECHNIQUES FOR PROVIDING STORAGE SERVICES USING NETWORKED COMPUTERIZED DEVICES HAVING DIRECT ATTACHED STORAGE | EMC Corporation |
| 11477216 | 8087084 | SECURITY FOR SCANNING OBJECTS | EMC Corporation |
| 11477292 | 8862996 | METHOD AND APPARATUS FOR CONTAINER MAPPING PRESENTATION OF DISTRIBUTED SYSTEMS | EMC Corporation |
| 11477301 | 8069309 | SERVICING MEMORY IN RESPONSE TO SYSTEM FAILURE | EMC Corporation |
| 11477302 | 7757123 | MANAGING FAULTS | EMC Corporation |
| 11477634 | 8443445 | RISK-AWARE SCANNING OF OBJECTS | EMC Corporation |
| 11477635 | 8122507 | EFFICIENT SCANNING OF OBJECTS | EMC Corporation |
| 11477965 | 7865677 | ENHANCING ACCESS TO DATA STORAGE | EMC Corporation |
| 11478029 | 7725653 | METHOD FOR ENABLING A MEMORY AS A FUNCTION OF ESTIMATED POWER SOURCE CAPACITY | EMC Corporation |
| 11478090 | 7818203 | METHOD FOR SCORING CUSTOMER LOYALTY AND SATISFACTION | EMC Corporation |
| 11478244 | 7761770 | DISK CONTROLLER ARCHITECTURE TO ALLOW ON-THE-FLY ERROR CORRECTION AND WRITE DISRUPTION DETECTION | EMC Corporation |
| 11478245 | 7460328 | COMPENSATION FOR VARIABLE SERVO TRACK | EMC Corporation |
| 11478370 | 7408734 | PREVENTING DAMAGE TO THE HEADS AND MEDIA IN A REMOVABLE CARTRIDGE AND DISK DRIVE | EMC Corporation |
| 11478557 | 7672077 | AUTO LOADING DEVICE FOR DATA STORAGE CARTRIDGES | EMC Corporation |
| 11478833 | 7555614 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR PREVENTING CONCURRENT EXECUTION OF CONFLICTING SOFTWARE OPERATIONS ON THE SAME AND DIFFERENT STORAGE PROCESSORS HAVING ACCESS TO A COMMON STORAGE MEDIUM WHILE AVOIDING DEADLOCKS | EMC Corporation |
| 11478897 | 7469313 | METHODS AND SYSTEMS FOR PRESERVING DISK GEOMETRY OF VIRTUALIZED DATA VOLUMES | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
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| 11478946 | 7536503 | METHODS AND SYSTEMS FOR PRESERVING DISK GEOMETRY WHEN MIGRATING EXISTING DATA VOLUMES | EMC Corporation |
| 11478958 | 7606825 | METHOD AND APPARATUS FOR PRESENTING OBJECTS IN AN ARRANGED FASHION | EMC Corporation |
| 11479317 | 7873601 | BACKUP OF INCREMENTAL METADATA IN BLOCK BASED BACKUP SYSTEMS | EMC Corporation |
| 11479336 | 7620774 | SYSTEM AND METHOD FOR MANAGING STORAGE NETWORKS AND PROVIDING VIRTUALIZATION OF RESOURCES IN SUCH A NETWORK USING ONE OR MORE CONTROL PATH CONTROLLERS WITH AN EMBEDDED ASIC ON EACH CONTROLLER | EMC Corporation |
| 11479556 | 7606889 | METHODS AND SYSTEMS FOR COMPARING STORAGE AREA NETWORK CONFIGURATIONS | EMC Corporation |
| 11479557 | 7580938 | METHODS AND APPARATUS FACILITATING EFFICIENT DISPLAY OF DATA | EMC Corporation |
| 11479649 | 7620775 | SYSTEM AND METHOD FOR MANAGING STORAGE NETWORKS AND PROVIDING VIRTUALIZATION OF RESOURCES IN SUCH A NETWORK USING ONE OR MORE ASICS | EMC Corporation |
| 11479864 | 7673099 | AFFINITY CACHING | EMC Corporation |
| 11479939 | 8473566 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR MANAGING QUALITY-OF-SERVICE ASSOCIATED WITH STORAGE SHARED BY COMPUTING GRIDS AND CLUSTERS WITH A PLURALITY OF NODES | EMC Corporation |
| | | | |
| 11480322 | 7640262 | POSITIONAL ALLOCATION | EMC Corporation |
| 11480323 | 7720892 | BULK UPDATES AND TAPE SYNCHRONIZATION | EMC Corporation |
| 11480346 | 7930559 | DECOUPLED DATA STREAM AND ACCESS STRUCTURES | EMC Corporation |
| 11482912 | 7673100 | METHODS AND SYSTEMS FOR DISTRIBUTED CACHE TAG MANAGEMENT | EMC Corporation |
| 11483131 | 7882064 | FILE SYSTEM REPLICATION | EMC Corporation |
| 11483839 | 7814365 | BACKING UP SELECTED FILES OF A COMPUTER SYSTEM | EMC Corporation |
| 11484881 | 7504969 | LOCALITY-BASED STREAM SEGMENTATION FOR DATA DEDUPLICATION | EMC Corporation |
| 11485813 | 7478205 | TECHNIQUES FOR PERFORMING DATA OPERATIONS SPANNING MORE THAN TWO DATA PARTITIONS | EMC Corporation |
| 11486957 | 7979584 | PARTITIONING A DATA STREAM USING EMBEDDED ANCHORS | EMC Corporation |
| 11487439 | 8006052 | SYSTEMS AND METHODS FOR TRACKING PORTIONS OF A LOGICAL VOLUME THAT HAVE NEVER BEEN WRITTEN BY A HOST | EMC Corporation |
| 11488907 | 7562250 | RESOURCE ALLOCATION THROTTLING IN REMOTE DATA MIRRORING SYSTEM | EMC Corporation |
| 11489397 | 7660953 | METHOD AND SYSTEM FOR MIRRORING AND ARCHIVING MASS STORAGE | EMC Corporation |
| 11489963 | 7389339 | AMBIGUITY-PURGING AND TEMPLATE-CONFLICT-RESOLUTION IN COMPUTER NETWORK EVENTS-NOTIFICATION | EMC Corporation |

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| 11493010 | 7739735 | SYSTEM AND METHOD FOR DYNAMIC OPTIMIZATIONS USING SECURITY ASSERTIONS | EMC Corporation |
| 11497806 | 8539056 | SYSTEMS AND METHODS FOR CONFIGURING MULTIPLE NETWORK INTERFACES | EMC Corporation |
| 11499929 | 7529883 | METHODS AND APPARATUS FOR PARSING A CONTENT ADDRESS TO FACILITATE SELECTION OF A PHYSICAL STORAGE LOCATION IN A DATA STORAGE SYSTEM | EMC Corporation |
| 11503318 | 7509524 | SYSTEMS AND METHODS FOR A DISTRIBUTED FILE SYSTEM WITH DATA RECOVERY | EMC Corporation |
| 11503333 | 7386668 | HANDLING DATA WRITES COPIED FROM A REMOTE DATA STORAGE DEVICE | EMC Corporation |
| 11503338 | 7383408 | STORAGE DEVICE THAT USES VIRTUAL ORDERED WRITES | EMC Corporation |
| 11505559 | 8255998 | INFORMATION PROTECTION METHOD AND SYSTEM | EMC Corporation |
| 11506397 | 8079091 | COMPLIANCE PROCESSING OF RIGHTS MANAGED DATA | EMC Corporation |
| 11506591 | 7680842 | SYSTEMS AND METHODS FOR A SNAPSHOT OF DATA | EMC Corporation |
| 11506596 | 7953704 | SYSTEMS AND METHODS FOR A SNAPSHOT OF DATA | EMC Corporation |
| 11506597 | 7899800 | SYSTEMS AND METHODS FOR PROVIDING NONLINEAR JOURNALING | EMC Corporation |
| 11506610 | 7680836 | SYSTEMS AND METHODS FOR A SNAPSHOT OF DATA | EMC Corporation |
| 11507069 | 7882071 | SYSTEMS AND METHODS FOR A SNAPSHOT OF DATA | EMC Corporation |
| 11507070 | 7822932 | SYSTEMS AND METHODS FOR PROVIDING NONLINEAR JOURNALING | EMC Corporation |
| 11507073 | 7676691 | SYSTEMS AND METHODS FOR PROVIDING NONLINEAR JOURNALING | EMC Corporation |
| 11507075 | 7590652 | SYSTEMS AND METHODS OF REVERSE LOOKUP | EMC Corporation |
| 11507076 | 7752402 | SYSTEMS AND METHODS FOR ALLOWING INCREMENTAL JOURNALING | EMC Corporation |
| 11510028 | 8667494 | CONTROLLING RESOURCE ALLOCATION USING THRESHOLDS AND SCHEDULING | EMC Corporation |
| 11511998 | 7346775 | SYSTEM AND METHOD FOR AUTHENTICATION OF USERS AND WEB SITES | EMC Corporation |
| 11512547 | 7590811 | METHODS AND SYSTEM FOR IMPROVING DATA AND APPLICATION AVAILABILITY IN CLUSTERS | EMC Corporation |
| 11519373 | 7565493 | METHODS FOR ASSISTING COMPUTER USERS PERFORMING MULTIPLE TASKS | EMC Corporation |
| 11519390 | 7451225 | CONFIGURING A CACHE PREFETCH POLICY IN A COMPUTER SYSTEM EMPLOYING OBJECT ADDRESSABLE STORAGE | EMC Corporation |
| 11519391 | 7565494 | CONFIGURING A BOUNDED CACHE PREFETCH POLICY IN A COMPUTER SYSTEM EMPLOYING OBJECT ADDRESSABLE STORAGE | EMC Corporation |
| 11519950 | 7526553 | CONFIGURING A CACHE IN A COMPUTER SYSTEM EMPLOYING OBJECT ADDRESSABLE STORAGE | EMC Corporation |

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| 11520979 | 7600202 | TECHNIQUES FOR PROVIDING A FAILURES IN TIME (FIT) RATE FOR A PRODUCT DESIGN PROCESS | EMC Corporation |
| | | | |
| 11522194 | 8250178 | PROTECTING CLIENT-SIDE CODE | EMC Corporation |
| | | | |
| 11525283 | 7685171 | TECHNIQUES FOR PERFORMING A RESTORATION OPERATION USING DEVICE SCANNING | EMC Corporation |
| 11525499 | 8028199 | METHOD AND APPARATUS FOR DETERMINING A SOURCE OF PERFORMANCE DEGRADATION IN DISTRIBUTED SYSTEMS TRANSMISSION | EMC Corporation |
| 11525647 | 8082231 | TECHNIQUES USING IDENTIFIERS AND SIGNATURES WITH DATA OPERATIONS | EMC Corporation |
| 11525649 | 7725704 | TECHNIQUES FOR PERFORMING A PRIORITIZED DATA RESTORATION OPERATION | EMC Corporation |
| 11527539 | 7908223 | SYSTEM AND METHOD FOR CONDUCTING SECURE TRANSACTIONS | EMC Corporation |
| 11527992 | 7702496 | METHOD AND APPARATUS FOR ANALYZING AND PROBLEM REPORTING IN GRID COMPUTING NETWORKS | EMC Corporation |
| 11528767 | 7617372 | AVOIDING COPY ON FIRST WRITE | EMC Corporation |
| 11528772 | 8135685 | INFORMATION CLASSIFICATION | EMC Corporation |
| 11528783 | | CASCADED DISCOVERY OF INFORMATION ENVIRONMENT | EMC Corporation |
| 11528790 | 8832246 | SERVICE LEVEL MAPPING METHOD | EMC Corporation |
| 11528895 | 7603366 | UNIVERSAL DATABASE SCHEMA AND USE | EMC Corporation |
| 11528898 | 9135322 | ENVIRONMENT CLASSIFICATION | EMC Corporation |
| 11528900 | 7640345 | INFORMATION MANAGEMENT | EMC Corporation |
| 11529038 | 7701877 | METHODS AND APPARATUS FOR REPRESENTING AND QUERYING STORAGE AREA NETWORK (SAN) TOPOLOGY | EMC Corporation |
| 11529123 | 8108882 | METHOD AND APPARATUS FOR INTERFACING AN OPERATING SYSTEM WITH A NETWORK INTERFACE DEVICE | EMC Corporation |
| 11529124 | 7849350 | RESPONDING TO A STORAGE PROCESSOR FAILURE WITH CONTINUED WRITE CACHING | EMC Corporation |
| 11529125 | 7571279 | ACCESSING A DISK DRIVE AT MULTIPLE SPEEDS | EMC Corporation |
| 11529143 | 7472223 | SURFACE LEVEL SPARING IN DISK DRIVES | EMC Corporation |
| 11529675 | 7606813 | MODEL CONSOLIDATION IN A DATABASE SCHEMA | EMC Corporation |
| 11529864 | 8145865 | VIRTUAL ORDERED WRITES SPILLOVER MECHANISM | EMC Corporation |
| 11529866 | 7624229 | SPILLOVER SLOT | EMC Corporation |
| 11529901 | 8194547 | CONFIGURING FLOW CONTROL SETTINGS | EMC Corporation |
| 11529911 | 7229294 | SUPPLYING POWER | EMC Corporation |
| 11529919 | 7945776 | SECURING A PASSPHRASE | EMC Corporation |
| 11530655 | 8607045 | TOKENCODE EXCHANGES FOR PERIPHERAL AUTHENTICATION | EMC Corporation |
| 11530998 | 7562221 | AUTHENTICATION METHOD AND APPARATUS UTILIZING PROOF-OF-AUTHENTICATION MODULE | EMC Corporation |
| 11536033 | 7483268 | DISK DRIVE CARRIER | EMC Corporation |
| 11536044 | 7515427 | BACK-TO-BACK DATA STORAGE SYSTEM | EMC Corporation |

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|---|---|---|---|
| 11536064 | 7425685 | CABLE ASSEMBLIES FOR CONNECTING DATA STORAGE CHASSIS TO A CABLE CONDUIT WITHIN A DATA STORAGE SYSTEM | EMC Corporation |
| 11536088 | 7840992 | SYSTEM AND METHOD FOR ENVIRONMENTALLY AWARE DATA PROTECTION | EMC Corporation |
| 11536121 | 7584339 | REMOTE BACKUP AND RESTORE OPERATIONS FOR ISB PROTOCOL SYSTEMS | EMC Corporation |
| 11536130 | 7587565 | GENERATING AUTOMATED AND SCHEDULED SAN COPY SESSIONS FOR ISB PROTOCOL SYSTEMS | EMC Corporation |
| 11536141 | 7487310 | ROTATION POLICY FOR SAN COPY SESSIONS FOR ISB PROTOCOL SYSTEMS | EMC Corporation |
| 11536164 | 7685460 | MULTIPLE CONCURRENT RESTORE USING SAME USER INTERFACE | EMC Corporation |
| 11536850 | 8555021 | SYSTEMS AND METHODS FOR AUTOMATING AND TUNING STORAGE ALLOCATIONS | EMC Corporation |
| 11536952 | 8745005 | CHECKPOINT RECOVERY USING B-TREE INTENT LOG WITH SYNCPOINTS | EMC Corporation |
| 11536995 | 7809912 | METHODS AND SYSTEMS FOR MANAGING I/O REQUESTS TO MINIMIZE DISRUPTION REQUIRED FOR DATA MIGRATION | EMC Corporation |
| 11537001 | 8145947 | USER CUSTOMIZABLE CVFS NAMESPACE | EMC Corporation |
| 11537028 | 7900088 | SYSTEM FOR PERFORMING INCREMENTAL FILE SYSTEM CHECK | EMC Corporation |
| 11537073 | 8935751 | METHOD FOR EXTENDING THE FRAGMENT MAPPING PROTOCOL TO PREVENT MALICIOUS ACCESS TO VIRTUALIZED STORAGE | EMC Corporation |
| 11537202 | 7817562 | METHODS AND SYSTEMS FOR BACK END CHARACTERIZATION USING I/O SAMPLING | EMC Corporation |
| 11538307 | 7640406 | DETECTING AND MANAGING ORPHAN FILES BETWEEN PRIMARY AND SECONDARY DATA STORES FOR CONTENT ADDRESSED STORAGE | EMC Corporation |
| 11538313 | 7599971 | DETECTING AND MANAGING MISSING PARENTS BETWEEN PRIMARY AND SECONDARY DATA STORES FOR CONTENT ADDRESSED STORAGE | EMC Corporation |
| 11538316 | 7603397 | DETECTING AND MANAGING MISSING PARENTS BETWEEN PRIMARY AND SECONDARY DATA STORES | EMC Corporation |
| 11538351 | 7685177 | DETECTING AND MANAGING ORPHAN FILES BETWEEN PRIMARY AND SECONDARY DATA STORES | EMC Corporation |
| 11538546 | 7398366 | TRACKING INCREMENTAL CHANGES IN A MASS STORAGE SYSTEM | EMC Corporation |
| 11538554 | 7890796 | AUTOMATIC MEDIA ERROR CORRECTION IN A FILE SERVER | EMC Corporation |
| 11540017 | | [REDACTED] | EMC Corporation |
| 11540018 | 7689786 | TECHNIQUES FOR OVERRIDING DEVICE RESERVATIONS | EMC Corporation |
| 11540048 | 8533158 | RECLAIMING DATA SPACE BY REWRITING METADATA | EMC Corporation |
| 11540058 | 7809884 | DATA STORAGE SYSTEM POWER MANAGEMENT | EMC Corporation |
| 11540096 | 8769065 | METHODS AND APPARATUS FOR IMPLEMENTING A DATA MANAGEMENT FRAMEWORK TO COLLECT NETWORK MANAGEMENT DATA | EMC Corporation |

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| 11540105 | 8041683 | METHODS AND APPARATUS FOR LOCATING NETWORK LOGS | EMC Corporation |
| 11540106 | | [REDACTED] | EMC Corporation |
| 11540159 | 8024171 | MANAGED RESOURCE SIMULATOR FOR STORAGE AREA NETWORKS | EMC Corporation |
| 11540160 | 8020108 | SEPARATION OF PRESENTATION AND BUSINESS MODELS FOR COMMON MANAGEMENT PLATFORM TASKS IN A STORAGE AREA NETWORK | EMC Corporation |
| 11540183 | 8024712 | COLLECTING APPLICATION LOGS | EMC Corporation |
| 11540184 | 7743030 | METHODS AND APPARATUS FOR DECLARATIVE LOG COLLECTION | EMC Corporation |
| 11540336 | 7770059 | FAILURE PROTECTION IN AN ENVIRONMENT INCLUDING VIRTUALIZATION OF NETWORKED STORAGE RESOURCES | EMC Corporation |
| 11540415 | 7756831 | COOPERATIVE LOCKING BETWEEN MULTIPLE INDEPENDENT OWNERS OF DATA SPACE | EMC Corporation |
| 11540416 | 7818517 | ARCHITECTURE FOR VIRTUALIZATION OF NETWORKED STORAGE RESOURCES | EMC Corporation |
| 11540437 | 8862639 | LOCKING ALLOCATED DATA SPACE | EMC Corporation |
| 11540458 | 8424013 | METHODS AND SYSTEMS FOR HANDLING INTERRUPTS ACROSS INSTANCES OF SOFTWARE | EMC Corporation |
| 11540459 | 8533696 | METHODS AND SYSTEMS FOR ALLOCATING HARDWARE RESOURCES TO INSTANCES OF SOFTWARE IMAGES | EMC Corporation |
| 11540472 | 7969747 | LINE CORD FILTER | EMC Corporation |
| 11540474 | 7502881 | DATA PACKET ROUTING MECHANISM UTILIZING THE TRANSACTION ID TAG FIELD | EMC Corporation |
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| 11540525 | 7526623 | OPTIMIZING RECLAMATION OF DATA SPACE | EMC Corporation |
| 11540832 | 7647466 | LINEAR SPACE ALLOCATION MECHANISMS IN DATA SPACE | EMC Corporation |
| 11540998 | 7587431 | UPDATING SNAPSHOTS | EMC Corporation |
| 11541062 | 7594085 | RECLAIMING DATA SPACE | EMC Corporation |
| 11541261 | 8645816 | CUSTOMIZING USER DOCUMENTATION | EMC Corporation |
| 11541262 | 7849262 | SYSTEM AND METHOD FOR VIRTUALIZATION OF NETWORKED STORAGE RESOURCES | EMC Corporation |
| 11541327 | | [REDACTED] | EMC Corporation |
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| 11541413 | 8468604 | METHOD AND SYSTEM FOR DETECTING MALWARE | EMC Corporation |
| | | | |
| 11550765 | 7743388 | COMPUTER DIRECTORY SYSTEM HAVING AN APPLICATION INTEGRATION DRIVER INFRASTRUCTURE | EMC Corporation |
| 11551827 | 7711858 | MANAGEMENT OF BACKGROUND COPY TASK FOR POINT-IN-TIME COPIES | EMC Corporation |
| 11551943 | 8589550 | ASYMMETRIC DATA STORAGE SYSTEM FOR HIGH PERFORMANCE AND GRID COMPUTING | EMC Corporation |
| 11556506 | 7849323 | PASSWORD PRESENTATION FOR MULTIMEDIA DEVICES | EMC Corporation |
| 11557941 | 7822728 | METADATA PIPELINING AND OPTIMIZATION IN A FILE SERVER | EMC Corporation |

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|---|---|---|---|
| 11563450 | 7818609 | METHODS AND SYSTEMS FOR MANAGING CORRUPTED META-DATA IN A COMPUTER SYSTEM OR NETWORK | EMC Corporation |
| 11563467 | 7793166 | METHODS AND SYSTEMS FOR RECOVERING META-DATA IN A CACHE MEMORY AFTER A CORRUPTION EVENT | EMC Corporation |
| 11582610 | 7702782 | USING WATERMARKS TO INDICATE ALERTS IN A STORAGE AREA NETWORK MANAGEMENT CONSOLE | EMC Corporation |
| 11584433 | 7599932 | DATA STORAGE USING IDENTIFIERS | EMC Corporation |
| 11585319 | 8417592 | INVENTORY OF LIBRARIES | EMC Corporation |
| 11585389 | 7874012 | PRIVILEGED ACCESS TO ENCRYPTED DATA | EMC Corporation |
| 11595272 | 7945534 | CONTINUOUS DATA BACKUP | EMC Corporation |
| | | | |
| 11607067 | 7770053 | SYSTEMS AND METHODS FOR MAINTAINING DATA INTEGRITY DURING A MIGRATION | EMC Corporation |
| 11607836 | 7810147 | DETECTING AND PREVENTING REPLAY IN AUTHENTICATION SYSTEMS | EMC Corporation |
| 11608240 | 8527618 | REPERCUSSIONLESS EPHENERAL AGENT FOR SCALABLE PARALLEL OPERATION OF DISTRIBUTED COMPUTERS | EMC Corporation |
| 11608770 | 8706833 | DATA STORAGE SERVER HAVING COMMON REPLICATION ARCHITECTURE FOR MULTIPLE STORAGE OBJECT TYPES | EMC Corporation |
| 11608780 | 7769722 | REPLICATION AND RESTORATION OF MULTIPLE DATA STORAGE OBJECT TYPES IN A DATA NETWORK | EMC Corporation |
| 11608952 | 7857688 | ELECTRICAL CABINET HAVING MULTI-CHANNEL EXHAUST WITH BLEEDING VENTS TO ALLEVIATE BACK-PRESSURE | EMC Corporation |
| 11610623 | 7694163 | SYSTEM FOR GENERATING AND MONITORING VOLTAGES GENERATED FOR A VARIETY OF DIFFERENT COMPONENTS ON A COMMON PRINTED CIRCUIT BOARD | EMC Corporation |
| 11610745 | 8762636 | DATA STORAGE SYSTEM HAVING A GLOBAL CACHE MEMORY DISTRIBUTED AMONG NON-VOLATILE MEMORIES WITHIN SYSTEM DISK DRIVES | EMC Corporation |
| 11611219 | 7577787 | METHODS AND SYSTEMS FOR SCHEDULING WRITE DESTAGES BASED ON A TARGET | EMC Corporation |
| 11612761 | 7720666 | METHOD FOR ESTABLISHING BIT ERROR RATE (BER) REQUIREMENT FOR A DATA COMMUNICATION SYSTEM | EMC Corporation |
| 11616342 | 8234465 | DISASTER RECOVERY USING MIRRORED NETWORK ATTACHED STORAGE | EMC Corporation |
| 11619132 | 7631009 | REDUNDANCY CHECK OF TRANSACTION RECORDS IN A FILE SYSTEM LOG OF A FILE SERVER | EMC Corporation |
| 11621762 | 8032558 | ROLE POLICY MANAGEMENT | EMC Corporation |
| 11626186 | 7689862 | APPLICATION FAILOVER IN A CLUSTER ENVIRONMENT | EMC Corporation |
| 11627000 | 7383385 | REMOTE MIRRORING IN A SWITCHED ENVIRONMENT | EMC Corporation |

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| 11634355 | 7757013 | TECHNIQUES FOR CONTROLLING DATA STORAGE SYSTEM PERFORMANCE | EMC Corporation |
| 11636151 | 7502898 | METHOD AND APPARATUS FOR MANAGING ACCESS TO STORAGE DEVICES IN A STORAGE SYSTEM WITH ACCESS CONTROL | EMC Corporation |
| | | | |
| 11638125 | 7430495 | METHOD AND APPARATUS FOR REPRESENTING, MANAGING, ANALYZING AND PROBLEM REPORTING IN HOME NETWORKS | EMC Corporation |
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| 11640068 | 8082403 | METHOD FOR CERTIFYING ERASURE OF ONE OR MORE DATA STORAGE DISK DRIVES | EMC Corporation |
| 11640599 | 7673031 | RESOURCE MAPPING IN A NETWORK ENVIRONMENT | EMC Corporation |
| 11640600 | 8046477 | CONFIGURATION VALIDATION AND AMBIGUOUS MAPPING | EMC Corporation |
| 11640667 | 7870276 | INTERFACE PLUGIN | EMC Corporation |
| 11640668 | 7624300 | MANAGING STORAGE STABILITY | EMC Corporation |
| 11640669 | 7486083 | MANAGING SYSTEM STABILITY | EMC Corporation |
| 11640670 | 7870220 | METHODS AND APPARATUS FOR ANALYZING VSAN CONFIGURATION | EMC Corporation |
| 11640671 | 7958450 | MATCHING USER INTERFACE | EMC Corporation |
| 11640741 | 7860015 | METHODS AND APPARATUS FOR PHYSICAL AND LOGICAL SAN FABRIC ANALYSIS | EMC Corporation |
| 11641411 | 7792796 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR OPTIMIZING RESOURCE ALLOCATION IN A HOST-BASED REPLICATION ENVIRONMENT | EMC Corporation |
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| 11643725 | 8286029 | SYSTEMS AND METHODS FOR MANAGING UNAVAILABLE STORAGE DEVICES | EMC Corporation |
| | | | |
| 11644088 | 7882061 | MULTI-THREAD REPLICATION ACROSS A NETWORK | EMC Corporation |
| 11644174 | 7818536 | METHODS AND APPARATUS FOR STORING CONTENT ON A STORAGE SYSTEM COMPRISING A PLURALITY OF ZONES | EMC Corporation |
| | | | |
| 11644341 | 8027970 | QUERY TRANSLATION FOR SEARCHING COMPLEX STRUCTURES OF OBJECTS | EMC Corporation |
| 11644421 | 7734889 | METHODS AND APPARATUS FOR DISTRIBUTING INFORMATION TO MULTIPLE NODES | EMC Corporation |
| 11644428 | 8046561 | METHODS AND APPARATUS FOR SELECTING A STORAGE ZONE FOR A CONTENT UNIT | EMC Corporation |
| 11644857 | 7913051 | METHODS AND APPARATUS FOR INCREASING THE STORAGE CAPACITY OF A ZONE OF A STORAGE SYSTEM | EMC Corporation |

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| 11645216 | 7593938 | SYSTEMS AND METHODS OF DIRECTORY ENTRY ENCODINGS | EMC Corporation |
| 11645332 | 7930456 | DATA PACKET ARBITRATION SYSTEM | EMC Corporation |
| 11646638 | 7779118 | METHOD AND APPARATUS FOR REPRESENTING, MANAGING, ANALYZING AND PROBLEM REPORTING IN STORAGE NETWORKS | EMC Corporation |
| 11646946 | 7930159 | METHOD AND APPARATUS FOR MULTI-REALM SYSTEM MODELING | EMC Corporation |
| 11647920 | 7779291 | FOUR SITE TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |
| 11648069 | 8577680 | MONITORING AND LOGGING VOICE TRAFFIC ON DATA NETWORK | EMC Corporation |
| 11648734 | 7734884 | SIMULTANEOUS CONCURRENT AND CASCADED TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |
| 11648770 | 7752404 | TOGGLING BETWEEN CONCURRENT AND CASCADED TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |
| 11648772 | 7680997 | DATA RECOVERY SIMULATION | EMC Corporation |
| 11650572 | 7509448 | SYSTEMS AND METHODS FOR MANAGING SEMANTIC LOCKS | EMC Corporation |
| 11651400 | 7660956 | SAVE SET BUNDLING FOR STAGING | EMC Corporation |
| 11668932 | 7702655 | MAINTAINING AND USING USER-CREATED MAPPING HISTORY FOR NETWORK RESOURCE MAPPING | EMC Corporation |
| 11671264 | 9137012 | WIRELESS AUTHENTICATION METHODS AND APPARATUS | EMC Corporation |
| 11671275 | 8378786 | SECURITY PROVISION IN STANDARDS--COMPLIANT RFID SYSTEMS | EMC Corporation |
| 11672390 | 7839783 | SYSTEMS AND METHODS OF IMPROVING PERFORMANCE OF TRANSPORT PROTOCOLS | EMC Corporation |
| 11673060 | 7599905 | METHOD AND SYSTEM FOR ALLOCATING MULTIPLE ATTRIBUTE STORAGE PROPERTIES TO SELECTED DATA STORAGE RESOURCES | EMC Corporation |
| 11674996 | 8156195 | SYSTEMS AND METHODS FOR OBTAINING ULTRA-HIGH DATA AVAILABILITY AND GEOGRAPHIC DISASTER TOLERANCE | EMC Corporation |
| 11675397 | 7769931 | METHODS AND SYSTEMS FOR IMPROVED VIRTUAL DATA STORAGE MANAGEMENT | EMC Corporation |
| 11678049 | 7870356 | CREATION OF SNAPSHOT COPIES USING A SPARSE FILE FOR KEEPING A RECORD OF CHANGED BLOCKS | EMC Corporation |
| 11678430 | 7742404 | SYSTEMS AND METHODS OF NETWORK MONITORING | EMC Corporation |
| 11680618 | 7672981 | OBJECT CLASSIFICATION AND INDEXING OF VERY LARGE NAME SPACES USING GRID TECHNOLOGY | EMC Corporation |
| 11682049 | 7957398 | METHODS AND SYSTEMS FOR DYNAMIC DIVISION OF PATH CAPACITY | EMC Corporation |
| 11682783 | 8301901 | SYSTEM AND METHOD FOR EXPRESSING AND EVALUATING SIGNED REPUTATION ASSERTIONS | EMC Corporation |
| 11684108 | 7818302 | SYSTEM AND METHOD FOR PERFORMING FILE SYSTEM CHECKS ON AN ACTIVE FILE SYSTEM | EMC Corporation |
| 11684139 | 7730090 | ARCHITECTURE FOR PERFORMING FILE SYSTEM CHECKING ON AN ACTIVE FILE SYSTEM | EMC Corporation |

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| 11688203 | 7747831 | HIGH EFFICIENCY PORTABLE ARCHIVE AND DATA PROTECTION USING A VIRTUALIZATION LAYER | EMC Corporation |
| 11690147 | 7779306 | METHOD FOR AUTOMATICALLY DIAGNOSING HARDWARE FAULTS IN A DATA STORAGE SYSTEM | EMC Corporation |
| 11690153 | 8166315 | METHOD FOR CALCULATING POWER FOR DATA STORAGE SYSTEMS | EMC Corporation |
| 11690165 | 7538453 | FAN POWER SUPPLY SYSTEM | EMC Corporation |
| 11692051 | 7752312 | GLOBAL VIEW OF SERVICE AREAS/LOCAL VIEW OF SERVICE NEEDS | EMC Corporation |
| 11692058 | 8046366 | ORCHESTRATING INDEXING | EMC Corporation |
| 11692881 | 7653612 | DATA PROTECTION SERVICES OFFLOAD USING SHALLOW FILES | EMC Corporation |
| 11693165 | 8156516 | VIRTUALIZED FEDERATED ROLE PROVISIONING | EMC Corporation |
| 11694094 | 7481679 | ELECTRICAL CONNECTOR AND CIRCUIT CARD ASSEMBLY | EMC Corporation |
| 11694753 | 8346748 | ENVIRONMENT CLASSIFICATION AND SERVICE ANALYSIS | EMC Corporation |
| 11694764 | 8543615 | AUCTION-BASED SERVICE SELECTION | EMC Corporation |
| 11700388 | 8997091 | TECHNIQUES FOR COMPLIANCE TESTING | EMC Corporation |
| 11701309 | 7966492 | SYSTEM AND METHOD FOR ALLOWING AN E-MAIL MESSAGE RECIPIENT TO AUTHENTICATE THE MESSAGE | EMC Corporation |
| 11705553 | 8234696 | METHOD AND SYSTEM FOR PROVIDING A ONE TIME PASSWORD TO WORK IN CONJUNCTION WITH A BROWSER | EMC Corporation |
| 11706172 | 8532300 | SYMMETRIC ENCRYPTION KEY MANAGEMENT | EMC Corporation |
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| 11714714 | 8126854 | USING VERSIONING TO BACK UP MULTIPLE VERSIONS OF A STORED OBJECT | EMC Corporation |
| 11714715 | 8347271 | SOFTWARE TESTING | EMC Corporation |
| 11724030 | 7849281 | METHOD AND SYSTEM FOR IMPLEMENTING HIERARCHICAL PERMISSION MAPS IN A LAYERED VOLUME GRAPH | EMC Corporation |
| 11724477 | 7739448 | SYSTEM AND METHOD FOR MANAGING STORAGE NETWORKS AND PROVIDING VIRTUALIZATION OF RESOURCES IN SUCH A NETWORK | EMC Corporation |
| 11725346 | 8037243 | INSTALLING DATA STORAGE SYSTEM SOFTWARE ON DISK DRIVE SYSTEMS | EMC Corporation |
| 11725882 | 7962595 | METHOD AND APPARATUS FOR DIAGNOSING HOST TO STORAGE DATA PATH LOSS DUE TO FIBRECHANNEL SWITCH FABRIC SPLITS | EMC Corporation |
| 11726311 | 7797500 | GEOMETRY ADAPTION USING DATA REDISTRIBUTION | EMC Corporation |
| 11726326 | 7930161 | METHOD AND APPARATUS FOR HORIZONTAL AND VERTICAL MODELED REPRESENTATION AND ANALYSIS OF DISTRIBUTED SYSTEMS | EMC Corporation |
| 11726744 | 8069310 | METHODS AND SYSTEMS FOR INCORPORATING SEQUENTIAL STREAM READ REQUESTS INTO PREFETCH MANAGEMENT FOR DATA STORAGE HAVING A CACHE MEMORY | EMC Corporation |

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|---|---|---|---|
| 11726831 | 9152349 | AUTOMATED INFORMATION LIFE-CYCLE MANAGEMENT WITH THIN PROVISIONING | EMC Corporation |
| 11728538 | 7634630 | STORING AUTHENTICATION INFORMATION IN A CONTENT UNIT ON AN OBJECT ADDRESSABLE STORAGE SYSTEM | EMC Corporation |
| 11728539 | 7904557 | GRANTING ACCESS TO A CONTENT UNIT STORED ON AN OBJECT ADDRESSABLE STORAGE SYSTEM | EMC Corporation |
| 11728540 | 7734886 | CONTROLLING ACCESS TO CONTENT UNITS STORED ON AN OBJECT ADDRESSABLE STORAGE SYSTEM | EMC Corporation |
| 11728749 | 8032785 | ARCHITECTURE FOR MANAGING DISK DRIVES | EMC Corporation |
| 11728768 | 7739470 | LIMIT ALGORITHM USING QUEUE DEPTH TO CONTROL APPLICATION PERFORMANCE | EMC Corporation |
| 11728907 | 8458263 | METHOD AND APPARATUS FOR ELECTRONIC MESSAGE ARCHIVE VERIFICATION | EMC Corporation |
| 11729164 | 8261029 | DYNAMIC BALANCING OF WRITES BETWEEN MULTIPLE STORAGE DEVICES | EMC Corporation |
| 11729166 | 7751398 | TECHNIQUES FOR PRIORITIZATION OF MESSAGING TRAFFIC | EMC Corporation |
| 11729222 | 8051324 | MASTER-SLAVE PROVIDER ARCHITECTURE AND FAILOVER MECHANISM | EMC Corporation |
| 11729707 | 7925829 | I/O OPERATIONS FOR A STORAGE ARRAY | EMC Corporation |
| 11729716 | 7945758 | STORAGE ARRAY PARTITIONING | EMC Corporation |
| 11729722 | 7970992 | ASYMMETRICAL DEVICE DISTRIBUTION FOR A PARTITIONED STORAGE SUBSYSTEM | EMC Corporation |
| 11729728 | 7809975 | RECOVERY FROM A STORAGE PROCESSOR FAILURE WRITE CACHE PRESERVATION | EMC Corporation |
| 11731130 | 8239692 | AUTOMATIC POWER-ON SYSTEM AND METHOD USING HIGH-SPEED COMMUNICATION LINE | EMC Corporation |
| 11731181 | 7716435 | PROTECTION OF POINT-IN-TIME APPLICATION DATA | EMC Corporation |
| 11731331 | 8527593 | CHANGE OF AN ARCHIVED EMAIL PROPERTY IN THE EMAIL SYSTEM LOCAL STORE | EMC Corporation |
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| 11731467 | 8103685 | METHODS AND APPARATUS FOR CAPTURING LAST DISCOVERY TIME OF MANAGED OBJECTS | EMC Corporation |
| 11731468 | 7984515 | SOFTWARE LICENSE ENFORCEMENT BY RUNTIME FEATURE ENABLEMENT | EMC Corporation |
| 11731469 | 8219681 | SYSTEM AND METHOD FOR MANAGING PROVISIONING OF STORAGE RESOURCES IN A NETWORK WITH VIRTUALIZATION OF RESOURCES IN SUCH A NETWORK | EMC Corporation |
| 11731582 | 7720884 | AUTOMATIC GENERATION OF ROUTINES AND/OR SCHEMAS FOR DATABASE MANAGEMENT | EMC Corporation |
| 11731608 | 8032599 | DISPLAY OF ARCHIVED EMAIL CONTENT IN A PREVIEW PANE | EMC Corporation |
| 11731609 | 7730146 | LOCAL EMAIL ARCHIVE STORE SIZE MANAGEMENT | EMC Corporation |
| 11731675 | 8032701 | SYSTEM AND METHOD FOR MANAGING PROVISIONING OF STORAGE RESOURCES IN A NETWORK WITH VIRTUALIZATION OF RESOURCES IN SUCH A NETWORK | EMC Corporation |
| 11731679 | 7904965 | USER ACTION SECURITY AUDITING | EMC Corporation |

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|---|---|---|---|
| 11731694 | 7860919 | METHODS AND APPARATUS FOR ASSIGNING OPERATIONS TO AGENTS BASED ON VERSIONS | EMC Corporation |
| 11731696 | 8203965 | LAYERED APPROACH FOR REPRESENTING AND ANALYZING VIRTUAL PRIVATE NETWORK SERVICES | EMC Corporation |
| 11731775 | 8015375 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR PARALLEL PROCESSING AND SAVING TRACKING INFORMATION FOR MULTIPLE WRITE REQUESTS IN A DATA REPLICATION ENVIRONMENT INCLUDING MULTIPLE DATA STORAGE DEVICES | EMC Corporation |
| 11731921 | 8463798 | PRIORITIZED RESTORE | EMC Corporation |
| 11731931 | 8375005 | RAPID RESTORE | EMC Corporation |
| 11732383 | 9391828 | STORING AND MONITORING COMPUTED RELATIONSHIPS BETWEEN NETWORK COMPONENTS | EMC Corporation |
| 11732664 | 8898126 | METHOD AND APPARATUS FOR PROVIDING CONCURRENT DATA INSERTION AND UPDATING | EMC Corporation |
| 11739311 | 9317222 | CENTRALIZED CONTENT ADDRESSED STORAGE | EMC Corporation |
| 11744200 | 9110920 | CIFS ACCESS TO NFS FILES AND DIRECTORIES BY TRANSLATING NFS FILE HANDLES INTO PSEUDO-PATHNAMES | EMC Corporation |
| 11746399 | 8065273 | AUTOMATED PRIORITY RESTORES | EMC Corporation |
| 11747567 | | [REDACTED] | EMC Corporation |
| 11747871 | 7721144 | METHODS AND SYSTEMS FOR IMPLEMENTING SHARED DISK ARRAY MANAGEMENT FUNCTIONS | EMC Corporation |
| 11748457 | 7822927 | DYNAMICALLY CONFIGURABLE REVERSE DNLC LOOKUP | EMC Corporation |
| 11757280 | 7680998 | JOURNALED DATA BACKUP DURING SERVER QUIESCENCE OR UNAVAILABILITY | EMC Corporation |
| 11761918 | 8260949 | METHOD AND SYSTEM FOR PROVIDING MULTIMEDIA INFORMATION ON DEMAND OVER WIDE AREA NETWORKS | EMC Corporation |
| 11764355 | 8301789 | TECHNIQUES FOR PORT HOPPING | EMC Corporation |
| 11766301 | 8046596 | RESET-TOLERANT AUTHENTICATION DEVICE | EMC Corporation |
| 11768319 | 8416772 | DATA STORAGE SYSTEM HAVING OPTICAL/NON-OPTICAL COMMUNICATION LCC | EMC Corporation |
| 11768608 | 7848746 | WIRELESS AUTHENTICATION METHODS AND APPARATUS | EMC Corporation |
| 11768648 | 7626237 | NON-VOLATILE MEMS MEMORY CELL AND METHOD OF FORMING SUCH MEMORY CELL | EMC Corporation |
| 11769407 | 8499331 | POLICY BASED NETWORK COMPLIANCE | EMC Corporation |
| 11769499 | 7809667 | RULE-BASED NETWORK RESOURCE COMPLIANCE | EMC Corporation |
| 11769561 | 7934248 | NETWORK POLICY ENFORCEMENT DASHBOARD VIEWS | EMC Corporation |
| 11769737 | 7979572 | DATA STORAGE SYSTEM HAVING OPERATION CODE IN ADDRESS PORTION FOR ATOMIC OPERATIONS | EMC Corporation |
| 11769739 | 7707367 | DATA STORAGE SYSTEM HAVING SEPARATE ATOMIC OPERATION/NON-ATOMIC OPERATION PATHS | EMC Corporation |

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| 11769740 | 7979588 | DATA STORAGE SYSTEM HAVING ACCELERATION PATH FOR CONGESTED PACKET SWITCHING NETWORK | EMC Corporation |
| 11769743 | 7769928 | DATA STORAGE SYSTEM HAVING CPUS ADAPTED TO PERFORM A SECOND ATOMIC OPERATION REQUEST PRIOR TO COMPLETION OF A FIRST ATOMIC OPERATION REQUEST | EMC Corporation |
| 11769744 | 7987229 | DATA STORAGE SYSTEM HAVING PLURAL DATA PIPES | EMC Corporation |
| 11769745 | 8090789 | METHOD OF OPERATING A DATA STORAGE SYSTEM HAVING PLURAL DATA PIPES | EMC Corporation |
| 11769746 | 8645623 | METHOD FOR PERFORMING A RAID OPERATION IN A DATA STORAGE SYSTEM | EMC Corporation |
| 11769790 | 7984131 | NETWORK CONFIGURATION HISTORY TRACKING | EMC Corporation |
| 11769855 | 9071439 | METHOD AND APPARATUS FOR REMOTE ADMINISTRATION OF CRYPTOGRAPHIC DEVICES | EMC Corporation |
| 11770059 | 8700575 | SYSTEM AND METHOD FOR INITIALIZING A NETWORK ATTACHED STORAGE SYSTEM FOR DISASTER RECOVERY | EMC Corporation |
| 11770216 | 7689587 | AUTOREP PROCESS TO CREATE PRE-LOADED REPOSITORY AND UPGRADE SCRIPTS | EMC Corporation |
| 11770824 | 8060759 | SYSTEM AND METHOD OF MANAGING AND OPTIMIZING POWER CONSUMPTION IN A STORAGE SYSTEM | EMC Corporation |
| 11770837 | 9158466 | POWER-SAVING MECHANISMS FOR A DYNAMIC MIRROR SERVICE POLICY | EMC Corporation |
| 11771561 | 7882373 | SYSTEM AND METHOD OF REDUCING POWER CONSUMPTION IN A STORAGE SYSTEM THROUGH SHORTENING OF SEEK DISTANCES | EMC Corporation |
| 11771604 | 9098211 | SYSTEM AND METHOD OF NON-DISRUPTIVE DATA MIGRATION BETWEEN A FULL STORAGE ARRAY AND ONE OR MORE VIRTUAL ARRAYS | EMC Corporation |
| 11771655 | 9063895 | SYSTEM AND METHOD OF NON-DISRUPTIVE DATA MIGRATION BETWEEN HETEROGENEOUS STORAGE ARRAYS | EMC Corporation |
| 11771686 | 9063896 | SYSTEM AND METHOD OF NON-DISRUPTIVE DATA MIGRATION BETWEEN VIRTUAL ARRAYS OF HETEROGENEOUS STORAGE ARRAYS | EMC Corporation |
| 11772129 | 7631155 | THIN PROVISIONING OF A FILE SYSTEM AND AN ISCSI LUN THROUGH A COMMON MECHANISM | EMC Corporation |
| 11772138 | 8285758 | TIERING STORAGE BETWEEN MULTIPLE CLASSES OF STORAGE ON THE SAME CONTAINER FILE SYSTEM | EMC Corporation |
| 11772149 | 7694191 | SELF HEALING FILE SYSTEM | EMC Corporation |
| 11772154 | 7818535 | IMPLICIT CONTAINER PER VERSION SET | EMC Corporation |
| 11772179 | 9361354 | HIERARCHY OF SERVICE AREAS | EMC Corporation |
| 11772182 | 9002800 | ARCHIVE AND BACKUP VIRTUALIZATION | EMC Corporation |
| 11772183 | 9235477 | VIRTUALIZED BACKUP SOLUTION | EMC Corporation |
| 11772192 | 8612570 | DATA CLASSIFICATION AND MANAGEMENT USING TAP NETWORK ARCHITECTURE | EMC Corporation |
| 11772513 | 7769736 | SYSTEM AND METHOD FOR EFFICIENT ISSUANCE OF QUERIES | EMC Corporation |

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| 11772552 | 8898261 | CONFIGURING AGENT SERVICES OPERABLE BY AGENTS IN A STORAGE AREA NETWORK | EMC Corporation |
| 11772805 | 7792800 | DATA REPOSITORY UPGRADE PROCESS | EMC Corporation |
| 11779486 | 8099401 | EFFICIENTLY INDEXING AND SEARCHING SIMILAR DATA | EMC Corporation |
| 11781739 | 7852581 | NETWORK SECURITY DEVICES AND METHODS | EMC Corporation |
| 11782594 | 7707166 | PROBABILISTIC SUMMARY DATA STRUCTURE BASED ENCODING FOR GARBAGE COLLECTION | EMC Corporation |
| 11784171 | 7730147 | PRIORITIZING ARCHIVED EMAIL REQUESTS | EMC Corporation |
| 11784172 | 7730148 | BACKFILLING A LOCAL EMAIL ARCHIVE STORE | EMC Corporation |
| 11784173 | 8156188 | EMAIL ARCHIVE SERVER PRIMING FOR A CONTENT REQUEST | EMC Corporation |
| 11784193 | 8930464 | EMAIL CONTENT PRE-CACHING TO A LOCAL ARCHIVE STORE | EMC Corporation |
| 11784194 | 8856241 | MANAGEMENT OF EMAIL ARCHIVE SERVER REQUESTS | EMC Corporation |
| 11784963 | 9235641 | METHOD AND APPARATUS FOR ARCHIVE PROCESSING OF ELECTRONIC MESSAGES | EMC Corporation |
| 11787117 | 7900015 | SYSTEMS AND METHODS OF QUOTA ACCOUNTING | EMC Corporation |
| 11787224 | 8966080 | SYSTEMS AND METHODS OF MANAGING RESOURCES UTILIZATION ON A THREADED COMPUTER SYSTEM | EMC Corporation |
| 11787225 | 7779048 | SYSTEMS AND METHODS FOR PROVIDING POSSIBLE VALUE RANGES | EMC Corporation |
| 11788407 | 7747581 | NETWORK FILE SYSTEM-BASED DATA STORAGE SYSTEM | EMC Corporation |
| 11789554 | 7567978 | POPULATION OF DISCOVERY DATA | EMC Corporation |
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| 11799847 | 7925796 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR PERFORMING AN INPUT/OUTPUT (I/O) OPERATION THAT INCLUDES A VIRTUAL DRAIN | EMC Corporation |
| 11800091 | 7996574 | MESSAGING MECHANISM FOR INTER PROCESSOR COMMUNICATION | EMC Corporation |
| 11801484 | 7836272 | METHODS AND APPARATUS FOR INTERFACING TO A DATA STORAGE SYSTEM | EMC Corporation |
| 11803385 | 8010697 | ORDERED WRITES FOR SRDF ASSIST | EMC Corporation |
| 11803607 | 7546220 | SYSTEM AND METHOD FOR PREPARING TRACE DATA FOR ANALYSIS | EMC Corporation |
| 11804578 | 8768895 | SUBSEGMENTING FOR EFFICIENT STORAGE, RESEMBLANCE DETERMINATION, AND TRANSMISSION | EMC Corporation |
| 11807049 | 8010543 | PROTECTING A FILE SYSTEM ON AN OBJECT ADDRESSABLE STORAGE SYSTEM | EMC Corporation |
| 11807070 | 7752492 | RESPONDING TO A FAILURE OF A STORAGE SYSTEM | EMC Corporation |
| 11807133 | 8095804 | STORING DELETED DATA IN A FILE SYSTEM SNAPSHOT | EMC Corporation |
| 11807134 | 8205049 | TRANSMITTING FILE SYSTEM ACCESS REQUESTS TO MULTIPLE FILE SYSTEMS | EMC Corporation |
| 11807204 | 7827137 | SEEDING REPLICATION | EMC Corporation |

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| 11811273 | 8201156 | AUTOMATIC GENERATION OF MESSAGE IDS | EMC Corporation |
| 11811274 | 8732724 | DELAYED RENDERING OF MESSAGES | EMC Corporation |
| 11811363 | 8707333 | MESSAGE ARGUMENT DESCRIPTORS | EMC Corporation |
| 11811676 | 8477033 | INVENTORY CONTROL | EMC Corporation |
| 11818576 | 8626741 | PROCESS FOR CATALOGING DATA OBJECTS BACKED UP FROM A CONTENT ADDRESSED STORAGE SYSTEM | EMC Corporation |
| 11818577 | 8190834 | PROCESS FOR CONTIGUOUSLY STREAMING DATA FROM A CONTENT ADDRESSED STORAGE SYSTEM | EMC Corporation |
| 11819609 | 8918537 | STORAGE ARRAY NETWORK PATH ANALYSIS SERVER FOR ENHANCED PATH SELECTION IN A HOST-BASED I/O MULTI-PATH SYSTEM | EMC Corporation |
| 11819611 | 7937481 | SYSTEM AND METHODS FOR ENTERPRISE PATH MANAGEMENT | EMC Corporation |
| 11819612 | 8204980 | STORAGE ARRAY NETWORK PATH IMPACT ANALYSIS SERVER FOR PATH SELECTION IN A HOST-BASED I/O MULTI-PATH SYSTEM | EMC Corporation |
| 11820574 | 8082390 | TECHNIQUES FOR REPRESENTING AND STORING RAID GROUP CONSISTENCY INFORMATION | EMC Corporation |
| 11820737 | 7752389 | TECHNIQUES FOR DETERMINING PHYSICAL DATA LAYOUT OF RAID DEVICES | EMC Corporation |
| 11821008 | 7769032 | TOPOLOGY SPLIT MANAGER USING GRAPH CONTRACTION | EMC Corporation |
| 11821841 | 8082227 | SESSION SENSITIVE DATA BACKUPS AND RESTORES | EMC Corporation |
| 11823152 | 7949637 | STORAGE MANAGEMENT FOR FINE GRAINED TIERED STORAGE WITH THIN PROVISIONING | EMC Corporation |
| 11823154 | 7747750 | METHOD FOR RESERVING RESOURCES IN A STORAGE AREA NETWORK WITH SELECTIVE CAPABILITIES | EMC Corporation |
| 11823156 | 8775368 | FINE GRAINED TIERED STORAGE WITH THIN PROVISIONING | EMC Corporation |
| 11823157 | 7899909 | METHOD FOR RESERVING RESOURCES IN A STORAGE AREA NETWORK BY RESERVING PORTIONS OF PROPERTIES OF THE RESOURCES | EMC Corporation |
| 11823499 | 7865761 | ACCESSING MULTIPLE NON-VOLATILE SEMICONDUCTOR MEMORY MODULES IN AN UNEVEN MANNER | EMC Corporation |
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| 11823619 | 8028110 | NON-DISRUPTIVE DATA MIGRATION AMONG STORAGE DEVICES USING INTEGRATED VIRTUALIZATION ENGINE OF A STORAGE DEVICE | EMC Corporation |
| 11823642 | 8112398 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR SELECTIVELY MARKING AND RETRIEVING DATA FROM AN EVENT LOG FILE | EMC Corporation |
| 11823683 | 7856022 | NON-DISRUPTIVE DATA MIGRATION WITH EXTERNAL VIRTUALIZATION ENGINE | EMC Corporation |
| 11823930 | 7746844 | METHOD AND APPARATUS FOR ANALYSIS OF VOIP NETWORK PERFORMANCE | EMC Corporation |

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| 11823986 | 8818936 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR PROCESSING READ REQUESTS RECEIVED DURING A PROTECTED RESTORE OPERATION | EMC Corporation |
| 11824198 | 7783620 | RELEVANCY SCORING USING QUERY STRUCTURE AND DATA STRUCTURE FOR FEDERATED SEARCH | EMC Corporation |
| 11824238 | 8711840 | METHOD AND APPARATUS FOR MANAGEMENT AND ANALYSIS OF SERVICES IN VOIP NETWORKS | EMC Corporation |
| 11824239 | 7568051 | FLEXIBLE UCB | EMC Corporation |
| 11824254 | 8924352 | AUTOMATED PRIORITY BACKUP AND ARCHIVE | EMC Corporation |
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| 11824304 | 7783630 | TUNING OF RELEVANCY RANKING FOR FEDERATED SEARCH | EMC Corporation |
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| 11824414 | 7856563 | MANAGING DISK DRIVE POWER STATES | EMC Corporation |
| 11824430 | 8990527 | DATA MIGRATION WITH SOURCE DEVICE REUSE | EMC Corporation |
| 11824433 | 8205218 | DATA STORAGE SYSTEM HAVING COMMON SOFTWARE ENVIRONMENT | EMC Corporation |
| 11824434 | 8060750 | SECURE SEED PROVISIONING | EMC Corporation |
| 11824435 | 7634567 | CONFIGURING DATA STORAGE FOR ELECTRONIC MAIL APPLICATION | EMC Corporation |
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| 11824485 | 8296534 | TECHNIQUES FOR USING FLASH-BASED MEMORY IN RECOVERY PROCESSING | EMC Corporation |
| 11824506 | 7950022 | TECHNIQUES FOR USE WITH DEVICE DRIVERS IN A COMMON SOFTWARE ENVIRONMENT | EMC Corporation |
| 11824542 | 7950025 | COMMON SOFTWARE ENVIRONMENT | EMC Corporation |
| 11824577 | 7793061 | TECHNIQUES FOR USING FLASH-BASED MEMORY AS A WRITE CACHE AND A VAULT | EMC Corporation |
| 11824578 | 7523231 | APPLICATION AWARE STORAGE | EMC Corporation |
| 11824592 | 8005861 | CLUSTER STORAGE USING SUBSEGMENTING FOR EFFICIENT STORAGE | EMC Corporation |
| 11829756 | 7783682 | PROBABILISTIC SUMMARY DATA STRUCTURE BASED ENCODING FOR GARBAGE COLLECTION IN BACKUP SYSTEMS | EMC Corporation |
| 11833012 | 9286595 | SYSTEM AND METHOD FOR COLLECTING AND NORMALIZING ENTITLEMENT DATA WITHIN AN ENTERPRISE | EMC Corporation |
| 11834904 | 8954522 | HORIZONTAL SCALING THROUGH UPPER LEVEL PROTOCOL PRE-PROCESSING | EMC Corporation |
| 11836735 | 8819344 | SHARED STORAGE ACCESS LOAD BALANCING FOR A LARGE NUMBER OF HOSTS | EMC Corporation |
| 11839453 | 7958166 | SYSTEM AND METHOD FOR PROVIDING WRITE-ONCE-READ-MANY (WORM) STORAGE | EMC Corporation |
| 11839897 | 7603515 | MIDPLANE-INDEPENDENT IMPLEMENTATIONS OF DATA STORAGE SYSTEM ENCLOSURES | EMC Corporation |
| 11843000 | 8010698 | NETWORK APPLICATION LAYER ROUTING | EMC Corporation |
| 11843287 | 7487539 | CROSS DOMAIN AUTHENTICATION AND SECURITY SERVICES USING PROXIES FOR HTTP ACCESS | EMC Corporation |
| 11846704 | 8527454 | DATA REPLICATION USING A SHARED RESOURCE | EMC Corporation |
| 11851702 | 8176169 | METHOD FOR NETWORK VISUALIZATION | EMC Corporation |

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| 11854616 | 7930487 | SYSTEM AND METHOD FOR PROVIDING ACCESS CONTROL TO RAW SHARED DEVICES | EMC Corporation |
| 11854784 | 8576875 | SYSTEMS AND METHODS OF IMPROVING PERFORMANCE OF TRANSPORT PROTOCOLS IN A MULTI-PATH ENVIRONMENT | EMC Corporation |
| 11855400 | 7574558 | SECTOR-EDGE CACHE | EMC Corporation |
| 11859100 | 8006111 | INTELLIGENT FILE SYSTEM BASED POWER MANAGEMENT FOR SHARED STORAGE THAT MIGRATES GROUPS OF FILES BASED ON INACTIVITY THRESHOLD | EMC Corporation |
| 11861636 | 7698491 | MODULAR PATCH PANEL WITH PLUGGABLE PERSONALITIES | EMC Corporation |
| 11862253 | 7684961 | LIGHT PATH DIAGNOSTICS | EMC Corporation |
| 11862318 | | [REDACTED] | EMC Corporation |
| 11862427 | 7945640 | METHODS AND APPARATUS FOR NETWORK PROVISIONING | EMC Corporation |
| 11862491 | 8447892 | PCI-E EXTENDED REACH WITH RECEIVE DETECT CIRCUITRY | EMC Corporation |
| 11862512 | 8005999 | DATA STORAGE SYSTEM WITH PCI-E EXTENDED REACH CAPABILITY | EMC Corporation |
| 11862582 | 7804793 | SAS DIPLEX COMMUNICATIONS | EMC Corporation |
| 11862589 | 7903683 | FAULT TOLERANT DIPLEX COMMUNICATIONS | EMC Corporation |
| 11862761 | 7445457 | TECHNIQUES FOR CONNECTING MIDPLANE CONNECTORS THROUGH A MIDPLANE | EMC Corporation |
| 11862783 | 7921311 | METHOD AND APPARATUS FOR MITIGATING CURRENT DRAIN IN A LOW-POWER HAND-HELD DEVICE | EMC Corporation |
| 11862800 | 7722359 | CONNECTION ASSEMBLY HAVING MIDPLANE WITH ENHANCED CONNECTION AND AIRFLOW FEATURES | EMC Corporation |
| 11863018 | 8209701 | TASK MANAGEMENT USING MULTIPLE PROCESSING THREADS | EMC Corporation |
| 11863042 | 8209702 | TASK EXECUTION USING MULTIPLE POOLS OF PROCESSING THREADS, EACH POOL DEDICATED TO EXECUTE DIFFERENT TYPES OF SUB-TASKS | EMC Corporation |
| 11863392 | 8438610 | IDENTITY-BASED ADDRESS NORMALIZATION | EMC Corporation |
| 11863530 | 8156220 | DATA STORAGE SYSTEM | EMC Corporation |
| 11863550 | 7471512 | STORAGE SYSTEM ASSEMBLY EMPLOYING REPEATER AMPLIFIERS IN I/O EXPANSION MODULE | EMC Corporation |
| 11863585 | 9134916 | MANAGING CONTENT IN A DISTRIBUTED SYSTEM | EMC Corporation |
| 11863745 | 8332613 | METHODS AND SYSTEMS FOR MANAGING I/O REQUESTS TO MINIMIZE DISRUPTION REQUIRED FOR DATA ENCAPSULATION AND DE-ENCAPSULATION | EMC Corporation |
| 11863780 | 8387066 | DEPENDENCY-BASED TASK MANAGEMENT | EMC Corporation |
| 11863882 | 7809964 | STORAGE SYSTEM ASSEMBLY WITH DISTRIBUTED ENCLOSURE MANAGEMENT | EMC Corporation |
| 11863885 | 8621550 | INFORMATION TECHNOLOGY RESOURCE COMPLIANCE TEMPLATES | EMC Corporation |
| 11863896 | 7567398 | DETECTION OF FLY HEIGHT CHANGE IN A DISK DRIVE | EMC Corporation |

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|---|---|---|---|
| 11863940 | 8024772 | APPLICATION SERVICE POLICY COMPLIANCE SERVER | EMC Corporation |
| 11864001 | 8059814 | TECHNIQUES FOR CARRYING OUT SEE OR KEY DERIVATION | EMC Corporation |
| 11864026 | 8819203 | TECHNIQUES FOR PROVIDING AN APPLICATION SERVICE TO AN APPLICATION FROM AN APPLIANCE-STYLE APPLICATION SERVICES PLATFORM | EMC Corporation |
| 11864040 | 8191084 | TECHNIQUES FOR SUPPORTING APPLICATION OPERATION | EMC Corporation |
| 11864054 | 8594335 | KEY VERIFICATION SYSTEM AND METHOD | EMC Corporation |
| 11864094 | 8589729 | DATA PRESERVATION SYSTEM AND METHOD | EMC Corporation |
| 11864115 | 8103801 | MARKING AND FAULTING INPUT/OUTPUT PORTS OF AN ELECTRONICS SYSTEM | EMC Corporation |
| 11864126 | 7822707 | OBJECT SEARCHING AND MANAGEMENT INFORMATION VIEWING IN A STORAGE AREA NETWORK ENVIRONMENT | EMC Corporation |
| 11864140 | 7934032 | INTERFACE FOR ESTABLISHING OPERABILITY BETWEEN A PROCESSOR MODULE AND INPUT/OUTPUT (I/O) MODULES | EMC Corporation |
| 11864457 | 8494977 | IT POLICY VIOLATION VIEWS | EMC Corporation |
| 11864583 | 8209506 | DE-DUPLICATION IN A VIRTUALIZED STORAGE ENVIRONMENT | EMC Corporation |
| 11864596 | 8868720 | DELEGATION OF DISCOVERY FUNCTIONS IN INFORMATION MANAGEMENT SYSTEM | EMC Corporation |
| 11864605 | 8548964 | DELEGATION OF DATA CLASSIFICATION USING COMMON LANGUAGE | EMC Corporation |
| 11864756 | 8880797 | DE-DUPLICATION IN A VIRTUALIZED SERVER ENVIRONMENT | EMC Corporation |
| 11864760 | 9141658 | DATA CLASSIFICATION AND MANAGEMENT FOR RISK MITIGATION | EMC Corporation |
| 11864764 | 9323901 | DATA CLASSIFICATION FOR DIGITAL RIGHTS MANAGEMENT | EMC Corporation |
| 11864770 | | [REDACTED] | EMC Corporation |
| 11864774 | 8522248 | MONITORING DELEGATED OPERATIONS IN INFORMATION MANAGEMENT SYSTEMS | EMC Corporation |
| 11864783 | 8719263 | SELECTIVE PERSISTENCE OF METATDATA IN INFORMATION MANAGEMENT | EMC Corporation |
| 11864943 | 8146155 | CONTROLLING ACCESS TO CONTENT ON AN OBJECT ADDRESSABLE STORAGE SYSTEM | EMC Corporation |
| 11866133 | 7885943 | IT COMPLIANCE RULES | EMC Corporation |
| 11866168 | 8024320 | QUERY LANGUAGE | EMC Corporation |
| 11867330 | 7620790 | METHODS AND APPARATUS FOR INTERFACING TO A DATA STORAGE SYSTEM | EMC Corporation |
| 11868882 | 8738669 | METHOD AND APPARATUS FOR PROVIDING ACCESS TO DATA OBJECTS WITHIN ANOTHER DATA OBJECT | EMC Corporation |
| 11878290 | 7774472 | SYSTEM AND METHOD FOR CROSS-AUTHORITATIVE CONFIGURATION MANAGEMENT | EMC Corporation |
| 11880325 | 7730180 | RESOLVING MULTIPLE MASTER NODE CONFLICT IN A DDB | EMC Corporation |

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| 11880462 | 7743033 | SYSTEM AND METHODS FOR PROVIDING A DISTRIBUTED FILE SYSTEM UTILIZING METADATA TO TRACK INFORMATION ABOUT DATA STORED THROUGHOUT THE SYSTEM | EMC Corporation |
| 11884776 | 8266295 | SYSTEM AND METHOD FOR DETECTING AND MITIGATING DNS SPOOFING TROJANS | EMC Corporation |
| 11886746 | 8122082 | SYSTEM AND METHOD FOR DETECTING A PROXY BETWEEN A CLIENT AND SERVER | EMC Corporation |
| | | | |
| 11890306 | | [REDACTED] | EMC Corporation |
| 11891237 | 8712966 | BACKUP AND RECOVERY OF DISTRIBUTED STORAGE AREAS | EMC Corporation |
| 11894697 | 7966289 | SYSTEMS AND METHODS FOR READING OBJECTS IN A FILE SYSTEM | EMC Corporation |
| 11894739 | 7949692 | SYSTEMS AND METHODS FOR PORTALS INTO SNAPSHOT DATA | EMC Corporation |
| 11894756 | 7882068 | SYSTEMS AND METHODS FOR ADAPTIVE COPY ON WRITE | EMC Corporation |
| 11897686 | 7702871 | WRITE PACING | EMC Corporation |
| 11900062 | 8584128 | TECHNIQUES FOR ADJUSTING PRIORITIES ASSOCIATED WITH SERVICING REQUESTS | EMC Corporation |
| 11901213 | 8832163 | TECHNIQUES FOR DETERMINING LOGICAL DATA OBJECTS CORRESPONDING TO PHYSICAL STORAGE LOCATIONS | EMC Corporation |
| 11901335 | 8015327 | TECHNIQUES FOR MONITORING AND MANAGING WAIT QUEUES | EMC Corporation |
| 11903869 | 7822939 | DATA DE-DUPLICATION USING THIN PROVISIONING | EMC Corporation |
| 11904129 | 8433777 | COMMUNICATION WITH MULTIPLE STORAGE PROCESSORS VIA DIRECT CONNECTIONS | EMC Corporation |
| 11904199 | 8819104 | COMMUNICATION WITH MULTIPLE STORAGE PROCESSORS USING NETWORK INFRASTRUCTURE. | EMC Corporation |
| 11904302 | 7930533 | PXE BOOTING A STORAGE PROCESSOR FROM A PEER STORAGE PROCESSOR | EMC Corporation |
| 11904359 | 8775549 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR AUTOMATICALLY ADJUSTING A DATA REPLICATION RATE BASED ON A SPECIFIED QUALITY OF SERVICE (QOS) LEVEL | EMC Corporation |
| 11904360 | 8190843 | METHODS, SYSTEMS, AND COMPUTER PROGRAM PRODUCTS FOR DYNAMICALLY ALLOCATING MEMORY AMONG A PLURALITY OF PROCESSES | EMC Corporation |
| 11904621 | 7778244 | STORAGE SYSTEM MANAGEMENT WITH DIPLEXING USING USB SIGNAL CONVERSION | EMC Corporation |
| 11904624 | 8145610 | DATA MODEL FOR SERVICE ARCHITECTURE | EMC Corporation |
| 11904671 | 8060709 | CONTROL OF STORAGE VOLUMES IN FILE ARCHIVING | EMC Corporation |
| 11904721 | 8244781 | NETWORK ACCESSED STORAGE FILES SYSTEM QUERY/SET PROXY SERVICE FOR A STORAGE VIRTUALIZATION SYSTEM | EMC Corporation |
| 11904756 | 8380950 | SYSTEM AND METHOD FOR DYNAMIC STORAGE DEVICE RECONFIGURATION | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 11904802 | 8380806 | SYSTEM AND METHOD FOR ABSOLUTE PATH DISCOVERY BY A STORAGE VIRTUALIZATION SYSTEM | EMC Corporation |
| 11904832 | 7873851 | POWERING DISK DRIVE SPINUP | EMC Corporation |
| 11904868 | 8239645 | MANAGING MIRRORING IN DATA STORAGE SYSTEM HAVING FAST WRITE DEVICE AND SLOW WRITE DEVICE | EMC Corporation |
| 11904880 | 8819234 | SUPPLYING DATA STORAGE SERVICES | EMC Corporation |
| 11904885 | 8918603 | STORAGE OF FILE ARCHIVING METADATA | EMC Corporation |
| 11904889 | 7895519 | TRACKING USE OF INTERFACE AND ONLINE ASSISTANCE | EMC Corporation |
| 11904892 | 8326805 | HIGH-AVAILABILITY FILE ARCHIVING | EMC Corporation |
| 11904972 | 8341121 | IMMINENT FAILURE PRIORITIZED BACKUP | EMC Corporation |
| 11904975 | 8583601 | IMMINENT FAILURE BACKUP | EMC Corporation |
| 11906026 | 8650615 | CROSS DOMAIN DELEGATION BY A STORAGE VIRTUALIZATION SYSTEM | EMC Corporation |
| 11906035 | 7873791 | METHODS AND SYSTEMS FOR INCORPORATING IMPROVED TAIL CUTTING IN A PREFETCH STREAM IN TBC MODE FOR DATA STORAGE HAVING A CACHE MEMORY | EMC Corporation |
| 11906127 | 8601131 | ACTIVE ELEMENT MANAGER | EMC Corporation |
| 11906131 | 8302201 | SECURITY AND LICENSING WITH APPLICATION AWARE STORAGE | EMC Corporation |
| 11906134 | 8150877 | ACTIVE ELEMENT MANAGEMENT AND ELECTRONIC COMMERCE | EMC Corporation |
| 11906149 | 8161083 | CREATING USER COMMUNITIES WITH ACTIVE ELEMENT MANAGER | EMC Corporation |
| 11906160 | 8296414 | TECHNIQUES FOR AUTOMATED APPLICATION DISCOVERY | EMC Corporation |
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| 11906565 | 8326969 | METHOD AND APPARATUS FOR PROVIDING SCALABILITY IN RESOURCE MANAGEMENT AND ANALYSIS SYSTEM- THREE WAY SPLIT ARCHITECTURE | EMC Corporation |
| 11924576 | 8903772 | DIRECT OR INDIRECT MAPPING POLICY FOR DATA BLOCKS OF A FILE IN A FILE SYSTEM | EMC Corporation |
| 11924744 | 8250633 | TECHNIQUES FOR FLEXIBLE RESOURCE AUTHENTICATION | EMC Corporation |
| 11925628 | 7613827 | DISTRIBUTED TRAFFIC CONTROLLER FOR NETWORK DATA | EMC Corporation |
| 11926784 | 8438617 | USER AUTHENTICATION BASED ON VOUCHER CODES | EMC Corporation |
| 11930738 | 8413221 | METHODS AND APPARATUS FOR DELEGATED AUTHENTICATION | EMC Corporation |
| | | | |
| 11933586 | 9282005 | IT INFRASTRUCTURE POLICY BREACH INVESTIGATION INTERFACE | EMC Corporation |
| 11933686 | 8135760 | DETERMINING THE LINEAGE OF A CONTENT UNIT ON AN OBJECT ADDRESSABLE STORAGE SYSTEM | EMC Corporation |
| 11936572 | 7447926 | DISK DRIVE INPUT SEQUENCING FOR STAGGERED DRIVE SPIN-UP | EMC Corporation |

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|---|---|---|---|
| 11938965 | 8665562 | METHOD OF RELIABLE USAGE OF DYNAMIC FLY-HEIGHT CONTROL AT ENVIRONMENTAL EXTREMES | EMC Corporation |
| 11939232 | 8495372 | AUTHENTICATION METHODS AND APPARATUS USING PAIRING PROTOCOLS AND OTHER TECHNIQUES | EMC Corporation |
| 11949204 | 8020203 | TECHNIQUES FOR HIGH AVAILABILITY OF VIRTUAL PRIVATE NETWORKS (VPN'S) | EMC Corporation |
| 11954399 | 8060710 | NON-DISRUPTIVE MIGRATION USING DEVICE IDENTITY SPOOFING AND PASSIVE/ACTIVE ORS PULL SESSIONS | EMC Corporation |
| 11959386 | 8244953 | SYSTEM AND METHOD FOR FASTER DATA RETRIEVAL FROM TAPE MEDIA | EMC Corporation |
| 11960073 | 7516288 | METHOD AND APPARATUS FOR COMPUTING FILE STORAGE ELEMENTS FOR BACKUP AND RESTORE | EMC Corporation |
| 11960759 | 7711869 | METHOD FOR COMMUNICATING PLURAL SIGNALS GENERATED AT A SOURCE TO A REMOTE DESTINATION THROUGH A SINGLE WIRE | EMC Corporation |
| 11962499 | | [REDACTED] | EMC Corporation |
| 11962521 | 8336089 | METHOD AND APPARATUS FOR PROVIDING AUTHENTICATION AND ENCRYPTION SERVICES BY A SOFTWARE AS A SERVICE PLATFORM | EMC Corporation |
| 11962545 | | [REDACTED] | EMC Corporation |
| 11962687 | 8706800 | CLIENT DEVICE SYSTEMS AND METHODS FOR PROVIDING SECURE ACCESS TO APPLICATION SERVICES AND ASSOCIATED CLIENT DATA HOSTED BY AN INTERNET COUPLED PLATFORM | EMC Corporation |
| 11962802 | 8539169 | MANAGING POWER CONSUMPTION OF A STORAGE SYSTEM | EMC Corporation |
| 11963086 | 8131919 | TECHNIQUES FOR CONTROLLING STORAGE DEVICE USE BY PERFORMING A STORAGE DEVICE LOCATION ASSESSMENT OPERATION BASED ON A CURRENT STORAGE DEVICE IDENTIFIER | EMC Corporation |
| 11963929 | 7849263 | TECHNIQUES FOR CONTROLLING STORAGE CAPACITY OF A DATA STORAGE SYSTEM | EMC Corporation |
| 11963947 | 7573726 | LATCH ASSEMBLY | EMC Corporation |
| 11964364 | | [REDACTED] | EMC Corporation |
| 11964789 | 8005227 | KEY INFORMATION CONSISTENCY CHECKING IN ENCRYPTING DATA STORAGE SYSTEM | EMC Corporation |
| 11965095 | 8954443 | MULTI-PROTOCOL DATA OBJECT SCANNING BY A STORAGE VIRTUALIZATION SYSTEM | EMC Corporation |
| 11965244 | 8010810 | TECHNIQUES FOR PROTECTING DATA USING AN ELECTRONIC ENCRYPTION ENDPOINT DEVICE | EMC Corporation |
| 11965250 | 8190921 | METHODOLOGY FOR VAULTING DATA ENCRYPTION KEYS WITH ENCRYPTED STORAGE | EMC Corporation |
| 11965253 | 8170213 | METHODOLOGY FOR COORDINATING CENTRALIZED KEY MANAGEMENT AND ENCRYPTION KEYS CACHED THROUGH PROXIED ELEMENTS | EMC Corporation |
| 11965429 | 7612288 | TECHNIQUES FOR ATTACHING A LABEL TO AN ELECTRONIC CABLE | EMC Corporation |
| 11965811 | 7705246 | COMPACT DIFFERENTIAL SIGNAL VIA STRUCTURE | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 11965841 | 7783818 | MODULARIZED INTERCONNECT BETWEEN ROOT COMPLEXES AND I/O MODULES | EMC Corporation |
| 11965914 | 7822895 | SCALABLE CPU (CENTRAL PROCESSING UNIT) MODULES FOR ENABLING IN-PLACE UPGRADES OF ELECTRONICS SYSTEMS | EMC Corporation |
| 11966615 | 7962657 | SELECTION OF A DATA PATH BASED ON OPERATION TYPE | EMC Corporation |
| 11966645 | 8145614 | SELECTION OF A DATA PATH BASED ON THE LIKELIHOOD THAT REQUESTED INFORMATION IS IN A CACHE | EMC Corporation |
| 11966662 | 7688753 | SELECTION OF A DATA PATH BASED ON ONE OR MORE PERFORMANCE CHARACTERISTICS OF A COMPUTER SYSTEM | EMC Corporation |
| 11966733 | 7925627 | SYSTEM AND METHOD FOR RECONCILING MULTI-PROTOCOL SCAN RESULTS BY A STORAGE VIRTUALIZATION SYSTEM | EMC Corporation |
| 11967471 | 8127307 | METHODS AND APPARATUS FOR STORAGE VIRTUALIZATION SYSTEM HAVING SWITCH LEVEL EVENT PROCESSING | EMC Corporation |
| 11967836 | 8301853 | SYSTEM AND METHOD FOR ASYNCHRONOUSLY MIRRORING DATA | EMC Corporation |
| 11967856 | 7843866 | SYSTEM AND METHOD FOR MIRRORING DATA | EMC Corporation |
| 11967871 | 8825971 | AGE-OUT SELECTION IN HASH CACHES | EMC Corporation |
| 11967875 | 8832698 | EVENT-DRIVEN STATE THREAD ARCHITECTURE | EMC Corporation |
| 11967898 | 8099549 | SYSTEM AND METHOD FOR ERASURE ENCODING | EMC Corporation |
| 11967900 | 7774314 | ACTIVE DIRECTORY CONTAINER RECOVERY | EMC Corporation |
| 11967918 | 8099550 | SYSTEM AND METHOD FOR SINGLE INSTANCE STORAGE | EMC Corporation |
| 11967940 | 8099554 | SYSTEM AND METHOD FOR FLASH-BASED DATA CACHING | EMC Corporation |
| 11968029 | 8832711 | USER INTERFACE FOR EVENT-DRIVEN STATE THREAD ARCHITECTURE | EMC Corporation |
| 11968040 | 7831787 | HIGH EFFICIENCY PORTABLE ARCHIVE | EMC Corporation |
| 11968045 | 8621240 | USER-SPECIFIC HASH AUTHENTICATION | EMC Corporation |
| 11968048 | 8190835 | GLOBAL DE-DUPLICATION IN SHARED ARCHITECTURES | EMC Corporation |
| 11968050 | 7783604 | DATA DE-DUPLICATION AND OFFSITE SAAS BACKUP AND ARCHIVING | EMC Corporation |
| 11968052 | 8135918 | DATA DE-DUPLICATION FOR ISCSI | EMC Corporation |
| 11968053 | 7788220 | STORAGE OF DATA WITH COMPOSITE HASHES IN BACKUP SYSTEMS | EMC Corporation |
| 11968057 | 7949630 | STORAGE OF DATA ADDRESSES WITH HASHES IN BACKUP SYSTEMS | EMC Corporation |
| 11968061 | 7797279 | MERGING OF INCREMENTAL DATA STREAMS WITH PRIOR BACKED-UP DATA | EMC Corporation |
| 11970728 | 7984074 | METHODS AND APPARATUS PROVIDING AN EXTENSIBLE MANAGEABLE ENTITY MODEL FOR A NETWORK | EMC Corporation |
| 11972157 | 7818606 | METHODS AND APPARATUS FOR SWITCH-INITIATED TRESPASS DECISION MAKING | EMC Corporation |
| 11977446 | 7836018 | SIMULTANEOUSLY ACCESSING FILE OBJECTS THROUGH WEB SERVICES AND FILE SERVICES | EMC Corporation |

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|---|---|---|---|
| 11978243 | 9122397 | EXPOSING STORAGE RESOURCES WITH DIFFERING CAPABILITIES | EMC Corporation |
| 11980011 | 7478194 | EFFICIENT MOUNTING AND DISMOUNTING OF STORAGE MEDIA | EMC Corporation |
| 11981845 | 8024535 | TECHNIQUES FOR PRODUCING A CONSISTENT COPY OF SOURCE DATA AT A TARGET LOCATION | EMC Corporation |
| 11983774 | 7558926 | CONTINUOUS DATA BACKUP USING DISTRIBUTED JOURNALING | EMC Corporation |
| 11985519 | 7860828 | SYSTEM AND METHOD FOR TRANSFERRING DATA FROM A SOURCE MACHINE TO A TARGET MACHINE | EMC Corporation |
| 11985610 | | [REDACTED] | EMC Corporation |
| 12/099598 | 9098432 | SYSTEM AND METHOD FOR DATA DEDUPLICATION OF BACKUP IMAGES | EMC Corporation |
| 12/336393 | 8190906 | METHOD AND APPARATUS FOR TESTING AUTHENTICATION TOKENS | EMC Corporation |
| 12/360872 | 9203620 | SYSTEM, METHOD AND APPARATUS FOR SECURE USE OF CRYPTOGRAPHIC CREDENTIALS IN MOBILE DEVICES | EMC Corporation |
| 12/483993 | 8250640 | TRANSPARENT KERBOROS DELEGATION WITH A STORAGE VIRTUALIZATION SYSTEM | EMC Corporation |
| 12/494645 | 8856081 | SINGLE RETENTION POLICY | EMC Corporation |
| 12/569280 | 8498411 | USING MULTIPLES ABOVE TWO WITH RUNNING TOTALS AND REFERENCE VALUES OTHER THAN 0 AND 2^ (WINDOW SIZE) IN ELLIPTIC CURVE CRYPTOGRAPHY SCALAR MULTIPLICATION ACCELERATION TABLES | EMC Corporation |
| 12/634116 | 8452989 | PROVIDING SECURITY TO AN ELECTRONIC DEVICE | EMC Corporation |
| 12/636612 | 9119076 | SYSTEM AND METHOD FOR AUTHENTICATION USING A MOBILE COMMUNICATION DEVICE | EMC Corporation |
| 12/892417 | 8499357 | SIGNING A LIBRARY FILE TO VERIFY A CALLBACK FUNCTION | EMC Corporation |
| 12/893594 | 8335771 | STORAGE ARRAY SNAPSHOTS FOR LOGGED ACCESS REPLICATION IN A CONTINUOUS DATA PROTECTION SYSTEM | EMC Corporation |
| 12001149 | 8387130 | AUTHENTICATED SERVICE VIRTUALIZATION | EMC Corporation |
| 12002431 | 8326794 | ACTIVE ELEMENT MANAGEMENT AND SUPPORT | EMC Corporation |
| 12002584 | 8321854 | CLIENT WITH FLEXIBLE GRAMMAR-BASE SYNTAX | EMC Corporation |
| 12002945 | 7860898 | TECHNIQUES FOR NOTIFICATION IN A DATA STORAGE SYSTEM | EMC Corporation |
| 12004167 | 7912995 | MANAGING SAS TOPOLOGY | EMC Corporation |
| 12004300 | 8667224 | TECHNIQUES FOR DATA PREFETCHING | EMC Corporation |
| 12004311 | 7861123 | MANAGING LOOP INTERFACE FAILURE | EMC Corporation |
| 12004391 | 9262146 | SUPPLYING SOFTWARE VIA DATA STORAGE SYSTEM | EMC Corporation |
| 12004735 | 8315986 | RESTORE OPTIMIZATION | EMC Corporation |
| 12004877 | 8418072 | UI DATA MODEL ABSTRACTION | EMC Corporation |
| 12004992 | 8583865 | CACHING WITH FLASH-BASED MEMORY | EMC Corporation |
| 12005011 | 8095938 | MANAGING ALERT GENERATION | EMC Corporation |
| 12005051 | 8255426 | EFFICIENT STORAGE OF NON-SEARCHABLE ATTRIBUTES | EMC Corporation |

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| | | | |
| 12005062 | 8930938 | MIGRATION TO A SERVICE-ORIENTED ARCHITECTURE | EMC Corporation |
| | | | |
| 12005140 | 8171006 | RETRIEVAL OF SEARCHABLE AND NON-SEARCHABLE ATTRIBUTES | EMC Corporation |
| 12005142 | 8150887 | IDENTIFIERS FOR NON-SEARCHABLE ATTRIBUTES | EMC Corporation |
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| 12005640 | 8555014 | AUTOMATIC ACCESS MANAGEMENT OF CLIENTS TO A STORAGE SYSTEM | EMC Corporation |
| 12005663 | 8028062 | NON-DISRUPTIVE DATA MOBILITY USING VIRTUAL STORAGE AREA NETWORKS WITH SPLIT-PATH VIRTUALIZATION | EMC Corporation |
| 12005679 | 7930476 | APPLICATION AWARE STORAGE RESOURCE PROVISIONING | EMC Corporation |
| 12005717 | 8082330 | APPLICATION AWARE AUTOMATED STORAGE POOL PROVISIONING | EMC Corporation |
| 12005787 | 7904652 | APPLICATION AWARE USE OF ADDED DEVICES | EMC Corporation |
| 12006127 | 7899996 | FULL TRACK READ FOR ADAPTIVE PRE-FETCHING OF DATA | EMC Corporation |
| 12008376 | 8321378 | METHOD AND APPARATUS FOR MANAGING INFORMATION RELATED TO STORAGE ACTIVITIES OF DATA STORAGE SYSTEMS | EMC Corporation |
| 12011984 | 8156405 | EFFICIENT REDUNDANT MEMORY UNIT ARRAY | EMC Corporation |
| 12011989 | 8266430 | SELECTIVE SHREDDING IN A DEDUPLICATION SYSTEM | EMC Corporation |
| 12015073 | 7810034 | BACKUP REPORTING FRAMEWORK GRAPHICAL USER INTERFACE | EMC Corporation |
| 12020609 | 7913056 | METHOD TO PERFORM PARALLEL DATA MIGRATION IN A CLUSTERED STORAGE ENVIRONMENT | EMC Corporation |
| 12022265 | 8566829 | COOPERATIVE MULTI-LEVEL SCHEDULER FOR VIRTUAL ENGINES | EMC Corporation |
| 12022268 | 8990799 | DIRECT MEMORY ACCESS THROUGH VIRTUAL SWITCH IN DEVICE DRIVER | EMC Corporation |
| 12023931 | 9002777 | SYSTEMS AND METHODS FOR HANDLING DATA | EMC Corporation |
| | | | |
| 12027953 | 7707416 | ISOLATING MULTIPLE AUTHENTICATION CHANNELS, EACH USING MULTIPLE AUTHENTICATION MODELS | EMC Corporation |
| | | | |
| 12030158 | | [REDACTED] | EMC Corporation |
| 12034505 | 8667034 | SYSTEM AND METHOD FOR PRESERVING SYMBOLIC LINKS BY A STORAGE VIRTUALIZATION SYSTEM | EMC Corporation |
| 12036523 | 8302161 | TECHNIQUES FOR ANONYMOUS INTERNET ACCESS | EMC Corporation |
| 12043728 | | [REDACTED] | EMC Corporation |
| 12043780 | 8588425 | ENCRYPTION KEY RECOVERY IN THE EVENT OF STORAGE MANAGEMENT FAILURE | EMC Corporation |

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| 12043863 | 8799681 | REDUNDANT ARRAY OF ENCRYPTING DISKS | EMC Corporation |
| 12043898 | 8498417 | AUTOMATION OF COORDINATION OF ENCRYPTION KEYS IN A SAN BASED ENVIRONMENT WHERE AN ENCRYPTION ENGINE, DEVICE MANAGEMENT, AND KEY MANAGEMENT ARE NOT CO-LOCATED | EMC Corporation |
| 12052907 | 7882386 | SYSTEM AND METHOD FOR RECOVERING A LOGICAL VOLUME DURING FAILOVER OR REBOOT OF A FILE SERVER IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 12057298 | 7984324 | SYSTEMS AND METHODS FOR MANAGING STALLED STORAGE DEVICES | EMC Corporation |
| 12057302 | 7870345 | SYSTEMS AND METHODS FOR MANAGING STALLED STORAGE DEVICES | EMC Corporation |
| 12057303 | 7949636 | SYSTEMS AND METHODS FOR A READ ONLY MODE FOR A PORTION OF A STORAGE SYSTEM | EMC Corporation |
| 12057321 | 7953709 | SYSTEMS AND METHODS FOR A READ ONLY MODE FOR A PORTION OF A STORAGE SYSTEM | EMC Corporation |
| 12057675 | 8032557 | MODEL DRIVEN COMPLIANCE MANAGEMENT SYSTEM AND METHOD | EMC Corporation |
| 12058240 | 8392370 | MANAGING DATA ON DATA STORAGE SYSTEMS | EMC Corporation |
| 12058834 | 8031634 | SYSTEM AND METHOD FOR MANAGING A VIRTUAL DOMAIN ENVIRONMENT TO ENABLE ROOT CAUSE AND IMPACT ANALYSIS | EMC Corporation |
| 12058854 | 8175987 | METHOD AND APPARATUS FOR COMPUTING A CHANGE PLAN | EMC Corporation |
| 12058966 | 8151048 | MANAGING STORAGE POOL PROVISIONING | EMC Corporation |
| 12058981 | 7873619 | MANAGING METADATA | EMC Corporation |
| 12059071 | 7890664 | METHODS AND APPARATUS FOR NON-DISRUPTIVE UPGRADE BY REDIRECTING I/O OPERATIONS | EMC Corporation |
| 12059127 | 8031722 | TECHNIQUES FOR CONTROLLING A NETWORK SWITCH OF A DATA STORAGE SYSTEM | EMC Corporation |
| 12059330 | 8131930 | SYSTEM AND METHOD FOR IMPROVING CACHE EFFICIENCY | EMC Corporation |
| 12059343 | 8713254 | SYSTEM AND METHOD FOR IMPROVING CACHE EFFICIENCY | EMC Corporation |
| 12059410 | 8275879 | GENERALIZED VIRTUALIZER IO PATH MODEL AND GENERAL VIRTUAL TRANSFORMATION MODEL FOR STORAGE ASSETS | EMC Corporation |
| 12059416 | 7836156 | METHOD AND APPARATUS FOR ANALYZING NETWORK INFRASTRUCTURE | EMC Corporation |
| 12059688 | 8095726 | ASSOCIATING AN IDENTIFIER WITH A CONTENT UNIT | EMC Corporation |
| 12059911 | 9002906 | SYSTEM AND METHOD FOR HANDLING LARGE TRANSACTIONS IN A STORAGE VIRTUALIZATION SYSTEM | EMC Corporation |
| 12060137 | 8847761 | ANONYMOUS TRANSACTION TOKENS | EMC Corporation |
| 12060152 | 7911346 | INVENTORY CONTROL USING ANONYMOUS TRANSACTION TOKENS | EMC Corporation |
| | | | |
| 12079234 | 7890459 | NON-DISRUPTIVE MODIFICATION OF DATA IN-PLACE | EMC Corporation |
| 12079436 | 8122209 | DISKLESS STORAGE DEVICE | EMC Corporation |

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| 12079476 | 8589645 | REMOTE READ FOR STORAGE DEVICES | EMC Corporation |
| 12079546 | 8135929 | CASCADED REMOTE DATA FACILITY SYSTEM HAVING DISKLESS INTERMEDIATE RDF SITE PROVIDING LOGICAL STORAGE DEVICE FUNCTIONALITY | EMC Corporation |
| 12079648 | 8387075 | COMMON SCHEDULING AND SYNCHRONIZATION PRIMITIVES | EMC Corporation |
| 12079759 | 8359603 | TECHNIQUES FOR INTER-USER-SPACE COMMUNICATION | EMC Corporation |
| 12079822 | 8209704 | TECHNIQUES FOR USER SPACE AND KERNEL SPACE COMMUNICATION | EMC Corporation |
| 12079919 | 8429351 | TECHNIQUES FOR DETERMINING AN AMOUNT OF DATA TO PREFETCH | EMC Corporation |
| 12079939 | 7822731 | TECHNIQUES FOR MANAGEMENT OF INFORMATION REGARDING A SEQUENTIAL STREAM | EMC Corporation |
| 12080027 | 8335899 | ACTIVE/ACTIVE REMOTE MIRRORING | EMC Corporation |
| 12081540 | 8185488 | SYSTEM AND METHOD FOR CORRELATING EVENTS IN A PLUGGABLE CORRELATION ARCHITECTURE | EMC Corporation |
| 12082244 | 7962520 | CLUSTER STORAGE USING DELTA COMPRESSION | EMC Corporation |
| 12082247 | 8166012 | CLUSTER STORAGE USING SUBSEGMENTING | EMC Corporation |
| 12089523 | 8311907 | SYSTEM AND METHOD FOR DETECTING FRAUDULENT TRANSACTIONS | EMC Corporation |
| 12098338 | | [REDACTED] | EMC Corporation |
| 12098342 | 8805820 | SYSTEMS AND METHODS FOR FACILITATING SEARCHES INVOLVING MULTIPLE INDICES | EMC Corporation |
| 12100514 | 8886909 | METHODS, SYSTEMS, AND COMPUTER READABLE MEDIUM FOR ALLOCATING PORTIONS OF PHYSICAL STORAGE IN A STORAGE ARRAY BASED ON CURRENT OR ANTICIPATED UTILIZATION OF STORAGE ARRAY RESOURCES | EMC Corporation |
| 12106228 | 7996511 | ENTERPRISE-SCALABLE SCANNING USING GRID-BASED ARCHITECTURE WITH REMOTE AGENTS | EMC Corporation |
| 12107326 | 7973607 | RTC CIRCUIT WITH TIME VALUE ADJUSTMENT | EMC Corporation |
| 12112407 | 8600941 | SYSTEM AND METHOD FOR AUTOMATIC CONFIGURATION OF NETWORKED INFORMATION TECHNOLOGY ASSETS FOR A BACKUP, RECOVERY AND ARCHIVING APPLICATION | EMC Corporation |
| 12113530 | 8301602 | DETECTION OF INCONSISTENCIES IN A FILE SYSTEM | EMC Corporation |
| 12113878 | 8230484 | CONTROL OF RESOURCE ACCESS PRIVILEGES VIA AGENT AUTHENTICATION | EMC Corporation |
| 12114245 | 8307210 | METHOD AND APPARATUS FOR SECURE VALIDATION OF TOKENS | EMC Corporation |
| 12115145 | 8381062 | PROOF OF RETRIEVABILITY FOR ARCHIVED FILES | EMC Corporation |
| 12115617 | 8407448 | SHARED STORAGE I/O ELIMINATION THROUGH MAPPING CLIENT INTEGRATION INTO A HYPERVISOR | EMC Corporation |
| 12119555 | | MANAGING COMPLEX DEPENDENCIES IN A FILE-BASED TEAM ENVIRONMENT | EMC Corporation |
| 12121843 | 8301876 | TECHNIQUES FOR SECURE NETWORK COMMUNICATION | EMC Corporation |

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|---|---|---|---|
| 12129605 | 8074289 | ACCESS TO CONTENT ADDRESSABLE DATA OVER A NETWORK | EMC Corporation |
| 12131544 | 7890795 | AUTO-ADAPTING CACHE MEMORY SYSTEM AND MEMORY | EMC Corporation |
| 12135979 | 7962779 | SYSTEMS AND METHODS FOR A DISTRIBUTED FILE SYSTEM WITH DATA RECOVERY | EMC Corporation |
| 12137814 | 8051378 | GENERIC MECHANISM FOR REPORTING ON BACKUPS | EMC Corporation |
| 12141289 | | [REDACTED] | EMC Corporation |
| 12144711 | 9146734 | HANDLING MANAGED OBJECT DATA | EMC Corporation |
| 12145769 | 8255803 | FACILITATING STORAGE POOL PROVISIONING | EMC Corporation |
| 12146550 | 8589358 | MECHANISMS TO SHARE ATTRIBUTES BETWEEN OBJECTS | EMC Corporation |
| 12147513 | 7572147 | LINE CORD FILTER | EMC Corporation |
| 12163006 | | [REDACTED] | EMC Corporation |
| 12164336 | 8151077 | APPLICATION AWARE CACHE MANAGEMENT | EMC Corporation |
| 12164407 | 9262039 | DISPLAYING DATA STORAGE SYSTEM INFORMATION | EMC Corporation |
| 12164595 | | [REDACTED] | EMC Corporation |
| 12164738 | 9009098 | METHODS AND APPARATUS FOR CREATING A CENTRALIZED DATA STORE | EMC Corporation |
| 12164817 | 8615678 | AUTO-ADAPTING MULTI-TIER CACHE | EMC Corporation |
| 12164959 | 8443369 | METHOD AND SYSTEM FOR DYNAMICALLY SELECTING A BEST RESOURCE FROM EACH RESOURCE COLLECTION BASED ON RESOURCES DEPENDENCIES, PRIOR SELECTIONS AND STATISTICS TO IMPLEMENT AN ALLOCATION POLICY | EMC Corporation |
| 12165001 | 8719812 | METHODS, SYSTEMS, AND COMPUTER READABLE MEDIA FOR DYNAMICALLY MODIFYING AND UTILIZING A SOFTWARE PACKAGE DESCRIPTION FOR SOFTWARE INSTALLATION | EMC Corporation |
| 12165032 | 8296530 | METHODS, SYSTEMS, AND COMPUTER READABLE MEDIA FOR OPTIMIZING THE NUMBER OF CLIENT WRITE REQUESTS TO VIRTUALLY PROVISIONED LOGICAL UNITS OF A PHYSICAL DATA STORAGE ARRAY | EMC Corporation |
| 12165220 | 7988063 | METHOD FOR CONTROLLING COOLING IN A DATA STORAGE SYSTEM | EMC Corporation |
| 12165612 | | [REDACTED] | EMC Corporation |
| 12176211 | 7849504 | METHODS AND APPARATUS PROVIDING A CATEGORICAL APPROACH TO ASPECT-ORIENTED PROGRAMMING | EMC Corporation |
| 12177976 | 8073922 | SYSTEM AND METHOD FOR REMOTE ASYNCHRONOUS DATA REPLICATION | EMC Corporation |
| 12184420 | 8571990 | SYSTEM AND METHOD FOR EXPRESSING AND EVALUATING SIGNED REPUTATION ASSERTIONS | EMC Corporation |
| 12186143 | 8229974 | MECHANISMS TO SUPPORT FINE-GRAIN NAMESPACING | EMC Corporation |
| 12186166 | 8341190 | MECHANISMS TO SUPPORT MULTIPLE NAME SPACE AWARE PROJECTS | EMC Corporation |
| 12188686 | 8031875 | KEY DISTRIBUTION IN UNIDIRECTIONAL CHANNELS WITH APPLICATIONS TO RFID | EMC Corporation |

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|---|---|---|---|
| 12190071 | 8112586 | PREDICTING AND OPTIMIZING I/O PERFORMANCE CHARACTERISTICS IN A MULTI-LEVEL CACHING SYSTEM | EMC Corporation |
| 12193520 | 8688773 | SYSTEM AND METHOD FOR DYNAMICALLY ENABLING AN APPLICATION FOR BUSINESS CONTINUITY | EMC Corporation |
| 12198021 | 8316064 | METHOD AND APPARATUS FOR MANAGING DATA OBJECTS OF A DATA STORAGE SYSTEM | EMC Corporation |
| 12201957 | 8260792 | SYSTEM AND METHOD FOR COMMITTING DATA OBJECTS TO BE IMMUTABLE | EMC Corporation |
| 12214667 | 7840595 | TECHNIQUES FOR DETERMINING AN IMPLEMENTED DATA PROTECTION POLICY | EMC Corporation |
| 12215150 | 8533604 | TECHNIQUES FOR USER INTERFACE SELECTION | EMC Corporation |
| 12215430 | 8185795 | SIDE CHANNEL FOR FORWARD ERROR CORRECTION USED WITH LONG-HAUL IP LINKS | EMC Corporation |
| 12215432 | 8010738 | TECHNIQUES FOR OBTAINING A SPECIFIED LIFETIME FOR A DATA STORAGE DEVICE | EMC Corporation |
| 12215904 | 8752057 | TECHNIQUES FOR SYNCHRONIZING PROCESSING OF AT LEAST TWO CODE THREADS | EMC Corporation |
| 12215917 | | [REDACTED] | EMC Corporation |
| 12215984 | 9170904 | I/O FAULT INJECTION USING SIMULATED COMPUTING ENVIRONMENTS | EMC Corporation |
| 12215985 | 8112451 | USING INTENTIONAL CATEGORY ASSIGNMENT FOR A CONFIGURATION MANAGEMENT DATABASE | EMC Corporation |
| 12217005 | 8291490 | TENNANT LIFE CYCLE MANAGEMENT FOR A SOFTWARE AS A SERVICE PLATFORM | EMC Corporation |
| 12217061 | 7856525 | CONTENT ADDRESSED STORAGE DEVICE CONFIGURED TO MAINTAIN CONTENT ADDRESS MAPPING | EMC Corporation |
| 12221210 | 8190948 | HANDLING OUT OF ORDER I/O USING TEMPORAL RELATIONSHIPS OF TRANSMITTED DATA | EMC Corporation |
| 12228171 | 8397027 | METHODS AND SYSTEMS FOR MULTI-CACHING | EMC Corporation |
| 12228647 | 8046551 | TECHNIQUES FOR PROCESSING I/O REQUESTS | EMC Corporation |
| 12231477 | 8707252 | TECHNIQUES FOR AUTOMATIC GENERATION OF PARSING CODE | EMC Corporation |
| 12233619 | 8375249 | METHOD FOR TESTING BATTERY BACKUP UNITS | EMC Corporation |
| 12236466 | 9152628 | CREATING COPIES OF SPACE-REDUCED FILES IN A FILE SERVER HAVING A REDUNDANT DATA ELIMINATION STORE | EMC Corporation |
| 12236997 | 7937453 | SCALABLE GLOBAL NAMESPACE THROUGH REFERRAL REDIRECTION AT THE MAPPING LAYER | EMC Corporation |
| 12238034 | 8255914 | INFORMATION RETRIEVAL TECHNIQUES INVOLVING THE USE OF PRIORITIZED OBJECT REQUESTS | EMC Corporation |
| 12238756 | 8327422 | AUTHENTICATING A SERVER DEVICE USING DYNAMICALLY GENERATED REPRESENTATIONS | EMC Corporation |
| 12238926 | 8413114 | METHOD TO SIMPLIFY DEVELOPING SOFTWARE HAVING LOCALIZATION | EMC Corporation |
| 12239178 | 8799571 | AUTO-EXPANDING CACHE MEMORY SYSTEM AND METHOD | EMC Corporation |
| 12239284 | 7883344 | ELECTRICAL CONNECTOR | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 12240076 | 8924876 | FILE-DRIVEN DRAG & DROP | EMC Corporation |
| 12240100 | 8130554 | SECURELY ERASING FLASH-BASED MEMORY | EMC Corporation |
| 12240666 | 8250033 | REPLICATION OF A DATA SET USING DIFFERENTIAL SNAPSHOTS | EMC Corporation |
| 12241166 | 8756666 | GENERATING AUTHENTICATION CODES | EMC Corporation |
| 12241200 | 8504857 | PROGRAMMABLE AVAILABILITY FOR A HIGH AVAILABILITY SYSTEM | EMC Corporation |
| 12241417 | 8346735 | CONTROLLING MULTI-STEP STORAGE MANAGEMENT OPERATIONS | EMC Corporation |
| 12241505 | 8549542 | CORRELATING INFORMATION FROM MODELED AND NON-MODELED DOMAINS | EMC Corporation |
| 12241531 | | [REDACTED] | EMC Corporation |
| 12241578 | 7890794 | HANDLING SAS TOPOLOGY PROBLEMS | EMC Corporation |
| 12241658 | 8010741 | METHODS AND APPARATUS FOR CONTROLLING MIGRATION OF CONTENT | EMC Corporation |
| 12241708 | 8161316 | MANAGING LOOP INTERFACE INSTABILITY | EMC Corporation |
| 12241715 | 8117160 | METHODS AND APPARATUS FOR CREATING POINT IN TIME COPIES IN A FILE SYSTEM USING REFERENCE COUNTS | EMC Corporation |
| 12241743 | 8250035 | METHODS AND APPARATUS FOR CREATING A BRANCH FILE IN A FILE SYSTEM | EMC Corporation |
| 12241783 | 8909875 | METHODS AND APPARATUS FOR STORING A NEW VERSION OF AN OBJECT ON A CONTENT ADDRESSABLE STORAGE SYSTEM | EMC Corporation |
| 12241829 | 8473593 | METHOD FOR DYNAMICALLY GENERATING INFORMATION OBJECTS BASED ON A RESTFUL SUBSCRIPTION REQUEST | EMC Corporation |
| 12241855 | 8667509 | PROVIDING CONTEXT INFORMATION FOR EVENTS TO AN EVENT HANDLING COMPONENT | EMC Corporation |
| 12241893 | 8239880 | ORCHESTRATING FLOW OF EVENT INFORMATION TO SEVERAL EVENT HANDLING COMPONENTS | EMC Corporation |
| 12241939 | 8763015 | EFFICIENT MULTI-NODE SYSTEM FOR PROVIDING EVENT INFORMATION TO EVENT HANDLING COMPONENTS | EMC Corporation |
| 12242030 | 8812455 | EFFICIENT DATA BACKUP | EMC Corporation |
| 12242070 | 8090689 | EFFICIENT DATA RECOVERY | EMC Corporation |
| 12242259 | 8990161 | SYSTEM AND METHOD FOR SINGLE SEGMENT BACKUP | EMC Corporation |
| 12242390 | 8600937 | SYSTEM AND METHOD FOR FAST VOLUME CLONING | EMC Corporation |
| 12242418 | 9244927 | SYSTEM AND METHOD FOR RECORD LEVEL MULTIPLEXING OF BACKUP DATA TO STORAGE MEDIA | EMC Corporation |
| 12242483 | 8077414 | SYSTEM AND METHOD FOR ANALYZING MAGNETIC MEDIA SURFACES FOR THERMAL ERASURES AND OTHER CHARACTERISTICS | EMC Corporation |
| 12242618 | 8086585 | ACCESS CONTROL TO BLOCK STORAGE DEVICES FOR A SHARED DISK BASED FILE SYSTEM | EMC Corporation |
| 12242638 | 8261068 | SYSTEMS AND METHODS FOR SELECTIVE ENCRYPTION OF OPERATING SYSTEM METADATA FOR HOST-BASED ENCRYPTION OF DATA AT REST ON A LOGICAL UNIT | EMC Corporation |

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|---|---|---|---|
| 12242690 | 8416954 | SYSTEMS AND METHODS FOR ACCESSING STORAGE OR NETWORK BASED REPLICAS OF ENCRYPTED VOLUMES WITH NO ADDITIONAL KEY MANAGEMENT | EMC Corporation |
| 12242694 | 8099572 | EFFICIENT BACKUP AND RESTORE OF STORAGE OBJECTS IN A VERSION SET | EMC Corporation |
| 12242725 | 8316196 | METHODS, SYSTEMS, AND COMPUTER READABLE MEDIA FOR IMPROVING SYNCHRONIZATION PERFORMANCE AFTER PARTIALLY COMPLETED WRITES | EMC Corporation |
| 12242866 | 8347388 | SYSTEM AND METHOD FOR ORCHESTRATING SERVICES | EMC Corporation |
| 12242874 | | [REDACTED] | EMC Corporation |
| 12248297 | 8707438 | SYSTEM AND METHOD FOR PROVIDING STORAGE FOR ELECTRONIC RECORDS | EMC Corporation |
| 12257710 | 8719233 | GENERIC METHOD AND APPARATUS FOR DATABASE SANITIZING | EMC Corporation |
| 12262316 | | [REDACTED] | EMC Corporation |
| 12264125 | 7725672 | SYSTEM AND METHOD FOR MANAGING DATA ASSOCIATED WITH COPYING AND RECOVERY PROCEDURES IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 12268112 | 8028009 | INCREMENTAL GARBAGE COLLECTION OF DATA IN SECONDARY STORAGE | EMC Corporation |
| 12268328 | 8275748 | SEMANTIC DATA MIGRATION | EMC Corporation |
| 12270447 | 8683325 | INDEXED APPROACH FOR DELIVERING MULTIPLE VIEWS OF AN XML DOCUMENT FROM A SINGLE XSLT FILE | EMC Corporation |
| 12286226 | 8117235 | TECHNIQUES FOR BINDING RESOURCES FOR USE BY A CONSUMER TIER | EMC Corporation |
| 12286296 | 8327324 | MESSAGE LOGGING SYSTEM | EMC Corporation |
| 12286374 | 8185505 | TECHNIQUES FOR PROCESSING RECOVERY POINTS | EMC Corporation |
| 12286427 | 8234380 | SINGLE COMMUNICATION CONNECTION FOR MANAGING A SYSTEM WITH MULTIPLE SERVICE PROCESSORS | EMC Corporation |
| 12286433 | 8555297 | TECHNIQUES FOR PERFORMING A REMOTE PROCEDURE CALL USING REMOTE PROCEDURE CALL CONFIGURATION INFORMATION | EMC Corporation |
| 12286434 | 8645375 | CONTROLLING INFORMATION ABOUT DATA STORAGE SYSTEM RETURNED TO AN END USER | EMC Corporation |
| 12286442 | 8112489 | CLIENT PROCESSING IN RESPONSE TO MANAGED SYSTEM STATE CHANGES | EMC Corporation |
| 12286454 | 7885276 | ISOLATING NETWORK TRAFFIC IN MULTI-TENNANT VIRTUALIZATION ENVIRONMENTS | EMC Corporation |
| 12286493 | 8271996 | EVENT QUEUES | EMC Corporation |
| 12290306 | 8151069 | MULTIPROTECTION FOR SNAPSHOTS | EMC Corporation |
| 12291989 | 8447740 | STREAM LOCALITY DELTA COMPRESSION | EMC Corporation |
| 12291997 | 8849772 | DATA REPLICATION WITH DELTA COMPRESSION | EMC Corporation |
| 12291998 | 8751462 | DELTA COMPRESSION AFTER IDENTITY DEDUPLICATION | EMC Corporation |
| 12315373 | 8140599 | GARBAGE COLLECTION FOR MERGED COLLECTIONS | EMC Corporation |

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|---|---|---|---|
| 12315374 | 8126852 | MERGED COLLECTIONS | EMC Corporation |
| | | | |
| 12316816 | 9003043 | TECHNIQUES FOR CLIENT AND SERVER COMMUNICATION | EMC Corporation |
| 12317158 | 7912051 | TECHNIQUES FOR PORT VIRTUALIZATION | EMC Corporation |
| 12317910 | 8335904 | IDENTIFYING ACTIVE AND INACTIVE DATA IN STORAGE SYSTEMS | EMC Corporation |
| 12319122 | 8566549 | SYNCHRONIZING PERFORMANCE REQUIREMENTS ACROSS MULTIPLE STORAGE PLATFORMS | EMC Corporation |
| 12324002 | 8478628 | COMPONENT BASED RISK SYSTEM | EMC Corporation |
| 12325438 | | METHOD AND APPARATUS PROVIDING A FRAMEWORK FOR SECURE INFORMATION LIFECYCLE | EMC Corporation |
| 12333271 | 8095764 | DYNAMIC APPLICATION AWARE STORAGE CONFIGURATION | EMC Corporation |
| 12335883 | | [REDACTED] | EMC Corporation |
| 12336381 | 8006842 | PACKAGING FOR AUTHENTICATION TOKENS | EMC Corporation |
| 12338766 | 8032261 | COOLING SYSTEM WITH ADAPTIVE PROTOCOL COOLING UNIT | EMC Corporation |
| 12339265 | 8176336 | SOFTWARE TRUSTED COMPUTING BASE | EMC Corporation |
| 12339528 | 8280930 | OBTAINING CONFIGURATION INFORMATION FROM HOST DEVICES WHICH STORE DATA INTO AND LOAD DATA FROM A DATA STORAGE ARRAY | EMC Corporation |
| 12340284 | 8560716 | TIME AND BANDWIDTH EFFICIENT RECOVERIES OF SPACE REDUCED DATA | EMC Corporation |
| 12340320 | 8725690 | TIME AND BANDWIDTH EFFICIENT BACKUPS OF SPACE REDUCED DATA | EMC Corporation |
| 12341017 | 9110790 | MANAGING MEMORY IN DISPLAYING DATA STORAGE SYSTEM INFORMATION | EMC Corporation |
| 12341023 | 8234648 | MANAGING THREADS IN DISPLAYING DATA STORAGE SYSTEM INFORMATION | EMC Corporation |
| 12341504 | | [REDACTED] | EMC Corporation |
| 12343517 | 8374731 | COOLING SYSTEM | EMC Corporation |
| 12343531 | 7953109 | SYSTEM FOR CONTROLLING OPTICAL TRANSCEIVER | EMC Corporation |
| 12344107 | 8527465 | SYSTEM AND METHOD FOR MODELING DATA CHANGE OVER TIME | EMC Corporation |
| 12344117 | 9069797 | SYSTEM AND METHOD FOR FILE SYSTEM SIMULATION | EMC Corporation |
| 12345957 | 8255550 | MULTI-PROTOCOL GLOBAL NAMESPACE MECHANISM FOR NETWORK ATTACHED STORAGE | EMC Corporation |
| 12346412 | 8166314 | SELECTIVE I/O TO LOGICAL UNIT WHEN ENCRYPTED, BUT KEY IS NOT AVAILABLE OR WHEN ENCRYPTION STATUS IS UNKNOWN | EMC Corporation |
| 12347447 | 8200923 | METHOD AND APPARATUS FOR BLOCK LEVEL DATA DE-DUPLICATION | EMC Corporation |
| 12347933 | 8788462 | MULTI-FACTOR PROBE TRIGGERS | EMC Corporation |
| 12347936 | 8589354 | PROBE BASED GROUP SELECTION | EMC Corporation |
| 12348866 | 9213721 | FILE SERVER SYSTEM HAVING TIERED STORAGE INCLUDING SOLID-STATE DRIVE PRIMARY STORAGE AND MAGNETIC DISK DRIVE SECONDARY STORAGE | EMC Corporation |

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|---|---|---|---|
| 12349182 | 8515911 | METHODS AND APPARATUS FOR MANAGING MULTIPLE POINT IN TIME COPIES IN A FILE SYSTEM | EMC Corporation |
| 12352917 | 8572093 | SYSTEM AND METHOD FOR PROVIDING A LICENSE DESCRIPTION SYNTAX IN A SOFTWARE DUE DILIGENCE SYSTEM | EMC Corporation |
| 12357210 | 7751538 | POLICY BASED INFORMATION LIFECYCLE MANAGEMENT | EMC Corporation |
| 12378412 | 7912799 | SMART CONTAINERS | EMC Corporation |
| 12378819 | 8209283 | SYSTEM AND METHOD FOR HIGHLY RELIABLE DATA REPLICATION | EMC Corporation |
| 12381888 | 7984255 | OPTIMIZING RECLAMATION OF DATA SPACE | EMC Corporation |
| 12384210 | 8325724 | DATA REDISTRIBUTION IN DATA REPLICATION SYSTEMS | EMC Corporation |
| 12388658 | 8468347 | SECURE NETWORK COMMUNICATIONS | EMC Corporation |
| 12409377 | 8082379 | SYSTEMS AND METHODS FOR MANAGING SEMANTIC LOCKS | EMC Corporation |
| 12410971 | 8990911 | SYSTEM AND METHOD FOR SINGLE SIGN-ON TO RESOURCES ACROSS A NETWORK | EMC Corporation |
| 12410992 | 8418238 | SYSTEM, METHOD, AND APPARATUS FOR MANAGING ACCESS TO RESOURCES ACROSS A NETWORK | EMC Corporation |
| 12411017 | 8291404 | UPDATING SYSTEM STATUS | EMC Corporation |
| 12411561 | 8819362 | MANAGING REPLICATION AND RESERVATIONS | EMC Corporation |
| 12411802 | | [REDACTED] | EMC Corporation |
| 12413806 | 8082337 | SYSTEM FOR ASSESSMENT OF POLICY COMPLIANCE OF AN ARBITRARY INFORMATION TOPOLOGY | EMC Corporation |
| 12414845 | 8631486 | ADAPTIVE IDENTITY CLASSIFICATION | EMC Corporation |
| 12415234 | 8929369 | SYSTEM AND METHOD FOR STRIPING/MIRRORING DATA | EMC Corporation |
| 12415447 | 8311960 | INTERACTIVE SEMI-SUPERVISED MACHINE LEARNING FOR CLASSIFICATION | EMC Corporation |
| 12415989 | 9195755 | RELEVANCY RADAR | EMC Corporation |
| 12416004 | 8688711 | CUSTOMIZABLE RELEVANCY CRITERIA | EMC Corporation |
| 12416019 | 8719275 | COLOR CODED RADARS | EMC Corporation |
| 12416139 | | [REDACTED] | EMC Corporation |
| 12416144 | | [REDACTED] | EMC Corporation |
| 12416145 | | [REDACTED] | EMC Corporation |
| 12416147 | 8656057 | OPPORTUNISTIC RESTORE | EMC Corporation |
| 12455951 | 8762348 | SEGMENT DEDUPLICATION SYSTEM WITH COMPRESSION OF SEGMENTS | EMC Corporation |
| 12455953 | 8401181 | SEGMENT DEDUPLICATION SYSTEM WITH ENCRYPTION OF SEGMENTS | EMC Corporation |
| 12455956 | 8731190 | SEGMENT DEDUPLICATION SYSTEM WITH ENCRYPTION AND COMPRESSION OF SEGMENTS | EMC Corporation |
| 12456835 | 8484616 | UNIVERSAL MODULE MODEL | EMC Corporation |
| 12459194 | 8296511 | METHOD AND SYSTEM OF PROVIDING OBJECT LOCATION METADATA COOKIES IN A FEDERATED CONTENT ADDRESSABLE STORAGE SYSTEM | EMC Corporation |
| 12459201 | 8635184 | SYSTEM AND METHOD FOR PROVIDING LONG-TERM STORAGE FOR DATA | EMC Corporation |

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|---|---|---|---|
| 12459411 | 8010505 | EFFICIENT BACKUP DATA RETRIEVAL | EMC Corporation |
| 12459467 | | [REDACTED] | EMC Corporation |
| 12459473 | 8457018 | MERKLE TREE REFERENCE COUNTS | EMC Corporation |
| 12459474 | 8706959 | VIRTUAL STORAGE MACHINE | EMC Corporation |
| 12460677 | 9128953 | ASYNCHRONOUS MULTI-NODE FILE SYSTEM COORDINATED REPLICATION | EMC Corporation |
| 12460766 | 8028138 | REPLICATION OF DEDUPLICATED STORAGE SYSTEM | EMC Corporation |
| | | | |
| 12466265 | 7958095 | METHODS AND APPARATUS FOR COLLECTING AND PROCESSING FILE SYSTEM DATA | EMC Corporation |
| 12473524 | | METHOD FOR DATA DISASTER RECOVERY ASSESSMENT AND PLANNING | EMC Corporation |
| 12484905 | 8054765 | SYSTEMS AND METHODS FOR PROVIDING VARIABLE PROTECTION | EMC Corporation |
| 12488147 | 8527703 | CACHE MANAGEMENT SYSTEM AND METHOD | EMC Corporation |
| 12488170 | 8452924 | CACHE MANAGEMENT SYSTEM AND METHOD | EMC Corporation |
| 12490481 | | [REDACTED] | EMC Corporation |
| 12490875 | 9148349 | DYNAMIC GRAPHICAL DISPLAY OF COMPONENTS IN A DATA STORAGE SYSTEM | EMC Corporation |
| 12493139 | 8863287 | COMMONALITY FACTORING PATTERN DETECTION | EMC Corporation |
| 12493144 | 8667591 | COMMONALITY FACTORING REMEDIATION | EMC Corporation |
| 12493148 | 8938806 | PARTIAL PATTERN DETECTION WITH COMMONALITY FACTORING | EMC Corporation |
| 12493295 | 8352941 | SCALABLE AND SECURE HIGH-LEVEL STORAGE ACCESS FOR CLOUD COMPUTING PLATFORMS | EMC Corporation |
| 12493541 | 8601531 | SYSTEM AUTHORIZATION BASED UPON CONTENT SENSITIVITY | EMC Corporation |
| 12493876 | 8171046 | CONVERTING CQL QUERY RESULTS INTO USER-CONTROLLABLE OBJECTS | EMC Corporation |
| 12493883 | 8131743 | OBJECT SEARCHING IN DATA STORAGE SYSTEMS | EMC Corporation |
| 12494115 | 8032498 | DELEGATED REFERENCE COUNT BASE FILE VERSIONING | EMC Corporation |
| 12494407 | 8149841 | SYSTEM AND METHOD FOR END-USER CUSTOM PARSING DEFINITIONS | EMC Corporation |
| 12494442 | 8245959 | POWERED CARD AND METHOD OF DISPOSING OF THE SAME | EMC Corporation |
| 12494467 | 8407527 | DIAGNOSING HARDWARE FAULTS IN A DATA STORAGE SYSTEM | EMC Corporation |
| 12494515 | 8281069 | DISTRIBUTED DATA STORAGE SYSTEM USING LOCAL COPY OPERATIONS FOR RAID-1 VOLUMES | EMC Corporation |
| 12494622 | 9274941 | FACILITATING DATA MIGRATION BETWEEN TIERS | EMC Corporation |
| 12494688 | 8285967 | METHOD FOR ON-DEMAND BLOCK MAP GENERATION FOR DIRECT MAPPED LUN | EMC Corporation |
| 12494912 | 8426733 | CONDUIT MANAGEMENT DEVICE | EMC Corporation |
| 12495189 | 8132073 | DISTRIBUTED STORAGE SYSTEM WITH ENHANCED SECURITY | EMC Corporation |
| 12495215 | 8812452 | CONTEXT-DRIVEN MODEL TRANSFORMATION FOR QUERY PROCESSING | EMC Corporation |

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|---|---|---|---|
| 12495296 | 8413164 | PRESENTING AN INTERFACE TO A COMPUTER SYSTEM FOR USE IN CONDUCTING DIAGNOSTIC TESTS | EMC Corporation |
| 12495447 | 8458483 | TECHNIQUES FOR MESSAGE-PASSING USING SHARED MEMORY OF AN RF TAG | EMC Corporation |
| 12495468 | 8539282 | MANAGING QUALITY TESTING | EMC Corporation |
| 12495473 | 9229850 | MAPPING DATA STORAGE AND VIRTUAL MACHINES | EMC Corporation |
| 12495491 | 8365247 | IDENTIFYING WHETHER ELECTRONIC DATA UNDER TEST INCLUDES PARTICULAR INFORMATION FROM A DATABASE | EMC Corporation |
| 12495698 | 8386409 | SYSLOG MESSAGE ROUTING SYSTEMS AND METHODS | EMC Corporation |
| 12500190 | 7941632 | STORAGE VIRTUALIZATION SYSTEM | EMC Corporation |
| 12533298 | 8627015 | DATA PROCESSING SYSTEM USING CACHE-AWARE MULTIPATH DISTRIBUTION OF STORAGE COMMANDS AMONG CACHING STORAGE CONTROLLERS | EMC Corporation |
| 12544046 | 9256598 | SYSTEMS, METHODS, AND COMPUTER READABLE MEDIA FOR COPY-ON-DEMAND OPTIMIZATION FOR LARGE WRITES | EMC Corporation |
| 12554752 | 8027984 | SYSTEMS AND METHODS OF REVERSE LOOKUP | EMC Corporation |
| 12561367 | 8856481 | DATA PROCESSING SYSTEM HAVING HOST-CONTROLLED PROVISIONING OF DATA STORAGE RESOURCES | EMC Corporation |
| 12562000 | 7739288 | SYSTEMS AND METHODS OF DIRECTORY ENTRY ENCODINGS | EMC Corporation |
| 12566846 | 8122158 | METHOD FOR IMPROVING IO PERFORMANCE OF HOST SYSTEMS USING EXTERNAL STORAGE SYSTEMS | EMC Corporation |
| 12567031 | 8326882 | ENVIRONMENT MANAGEMENT INTERFACE FOR MANAGEMENT OF A HETEROGENEOUS STORAGE ENVIRONMENT | EMC Corporation |
| 12567988 | 8190584 | UTILIZING RECURSIVE APPLICATION OF A REVERSIBLE TRANSFORM WHICH INVOLVES LEXICOGRAPHIC ORDERING | EMC Corporation |
| 12568203 | 8214612 | ENSURING CONSISTENCY OF REPLICATED VOLUMES | EMC Corporation |
| 12568722 | 8510566 | AUTHENTIC TIME-STAMPING FOR ARCHIVAL STORAGE | EMC Corporation |
| 12568978 | 8462495 | DISK DRIVE CARRIER AND DISK DRIVE ENCLOSURE COOLING SYSTEM | EMC Corporation |
| 12569284 | 8345864 | ELLIPTIC CURVE CRYPTOGRAPHY SCALAR MULTIPLICATION WITH ON-DEMAND ACCELERATION TABLE GENERATION | EMC Corporation |
| 12569683 | 8806123 | EXPANDABLE DATA STORAGE SYSTEM | EMC Corporation |
| 12569969 | | [REDACTED] | EMC Corporation |
| 12570136 | 9170737 | PROCESSING DATA STORAGE SYSTEM CONFIGURATION INFORMATION | EMC Corporation |
| 12570526 | | [REDACTED] | EMC Corporation |
| 12570580 | 8285302 | SYSTEM AND METHOD FOR LOCATING DEVICES WITHIN A DATA CENTER | EMC Corporation |

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|---|---|---|---|
| 12570685 | 8776158 | ASYNCHRONOUS SHIFTING WINDOWS CACHING FOR FORWARD AND BACKWARD VIDEO STREAMING | EMC Corporation |
| 12570716 | 8473905 | MANAGING USER INTERFACE CHARACTERISTICS IN DISPLAYING DATA STORAGE SYSTEMS INFORMATION | EMC Corporation |
| 12570720 | 8527696 | SYSTEM AND METHOD FOR OUT-OF-BAND CACHE COHERENCY | EMC Corporation |
| 12570836 | | [REDACTED] | EMC Corporation |
| 12571007 | 8190850 | VIRTUAL BLOCK MAPPING FOR RELOCATING COMPRESSED AND/OR ENCRYPTED FILE DATA BLOCK BLOCKS | EMC Corporation |
| 12571082 | | [REDACTED] | EMC Corporation |
| 12571324 | 8209474 | SYSTEM AND METHOD FOR SUPERBLOCK DATA WRITES | EMC Corporation |
| 12571377 | 8676761 | PREPARATION OF A SYSTEM IMAGE FOR RAPID RESTORE | EMC Corporation |
| 12571380 | 8959061 | RAPID RESTORE FROM A PREPARED SYSTEM IMAGE | EMC Corporation |
| 12571384 | 9135258 | REDUNDANT BACKUP ELIMINATION | EMC Corporation |
| 12571423 | 8474038 | METHODS AND APPARATUS RELATED TO MIGRATION OF CUSTOMER RESOURCES TO VIRTUAL RESOURCES WITHIN A DATA CENTER ENVIRONMENT | EMC Corporation |
| 12571424 | 8701193 | MALWARE DETECTION VIA SIGNATURE INDICES | EMC Corporation |
| 12571428 | 8340933 | METHOD AND SYSTEM FOR PERFORMING POWER SUPPLY SELF DIAGNOSTICS IN REDUNDANT POWER ARCHITECTURES | EMC Corporation |
| 12571432 | 8655844 | FILE VERSION TRACKING VIA SIGNATURE INDICES | EMC Corporation |
| 12580799 | | [REDACTED] | EMC Corporation |
| 12586097 | 8307271 | FAST VERIFICATION OF DATA BLOCK CYCLIC REDUNDANCY CHECKS | EMC Corporation |
| 12586765 | 7962672 | TECHNIQUES FOR DATA STORAGE CONFIGURATION | EMC Corporation |
| 12586766 | 8290906 | INTELLIGENT RESOURCE SYNCHRONIZATION | EMC Corporation |
| 12586837 | | [REDACTED] | EMC Corporation |
| 12586845 | | [REDACTED] | EMC Corporation |
| 12586925 | 8706960 | TECHNIQUES FOR PERFORMING DATA MIGRATION | EMC Corporation |
| 12586939 | 8627446 | FEDERATING DATA BETWEEN GROUPS OF SERVERS | EMC Corporation |
| 12592215 | 7925858 | LINEAR SPACE ALLOCATION MECHANISMS IN DATA SPACE | EMC Corporation |
| 12592988 | 8364858 | NORMALIZING CAPACITY UTILIZATION WITHIN VIRTUAL STORAGE POOLS | EMC Corporation |
| 12609681 | 8073821 | METHOD AND APPARATUS FOR MANAGING AND ARCHIVING PERFORMANCE INFORMATION RELATING TO STORAGE SYSTEM | EMC Corporation |
| 12619178 | 8078905 | RESTORING CONFIGURATIONS OF DATA STORAGE SYSTEMS | EMC Corporation |
| 12628473 | 8583885 | ENERGY EFFICIENT SYNC AND ASYNC REPLICATION | EMC Corporation |

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|---|---|---|---|
| 12629952 | 8782036 | ASSOCIATIVE MEMORY BASED DESKTOP SEARCH TECHNOLOGY | EMC Corporation |
| 12633395 | 8428252 | USING MULTIPLES ABOVE TWO WITH RUNNING TOTALS IN ELLIPTIC CURVE CRYPTOGRAPHY SCALAR MULTIPLICATION ACCELERATION TABLES | EMC Corporation |
| 12633400 | 8411855 | SIZE OPTIMIZATION FOR LARGE ELLIPTIC CURVE CRYPTOGRAPHY SCALAR MULTIPLICATION ACCELERATION TABLES | EMC Corporation |
| 12633717 | 7987204 | MULTI-EPOCH METHOD FOR SAVING AND EXPORTING FILE SYSTEM EVENTS | EMC Corporation |
| 12633837 | 8296329 | CONTROLLER WITH HEURISTIC BUNDLE OPTIMIZER FOR DATA CENTER MIGRATION OR OTHER TYPE OF TRANSITION | EMC Corporation |
| 12634814 | 8327378 | METHOD FOR GRACEFULLY STOPPING A MULTI-THREADED APPLICATION | EMC Corporation |
| 12637063 | 8495153 | DISTRIBUTION OF MESSAGES IN NODES CONNECTED BY A GRID ARCHITECTURE | EMC Corporation |
| 12638067 | 9135261 | SYSTEMS AND METHODS FOR FACILITATING DATA DISCOVERY | EMC Corporation |
| 12638137 | 8959192 | USER-CONTEXT MANAGEMENT | EMC Corporation |
| 12638262 | 9046582 | SYSTEM AND METHOD FOR TESTING A BATTERY | EMC Corporation |
| 12638295 | 8593827 | COMPRESSIBLE ENGAGEMENT ASSEMBLY | EMC Corporation |
| 12638617 | 8551263 | METHOD FOR REDUCING WHISKER GROWTH | EMC Corporation |
| 12638673 | 8783333 | COOLING SYSTEM | EMC Corporation |
| 12639292 | 8849947 | IT DISCOVERY OF VIRTUALIZED ENVIRONMENTS BY SCANNING VM FILES AND IMAGES | EMC Corporation |
| 12639469 | 8549224 | MIGRATION ANALYZER FOR HARDWARE-BASED STORAGE TIERING | EMC Corporation |
| 12639668 | 8443157 | DATA STORAGE SYSTEM HAVING ASSOCIATED SITUATIONAL ANALYSIS FRAMEWORK FOR AUTOMATIC RESPONSE TO MOVEMENT IN A STATE SPACE | EMC Corporation |
| 12640254 | 8566483 | MEASURING DATA ACCESS ACTIVITY | EMC Corporation |
| 12640292 | 8380928 | APPLYING DATA ACCESS ACTIVITY MEASUREMENTS | EMC Corporation |
| 12640732 | 8311764 | SYSTEM AND METHOD FOR APPROXIMATING AMBIENT TEMPERATURE | EMC Corporation |
| 12642071 | 8140821 | EFFICIENT READ/WRITE ALGORITHMS AND ASSOCIATED MAPPING FOR BLOCK-LEVEL DATA REDUCTION PROCESS | EMC Corporation |
| 12642109 | 8156306 | SYSTEMS AND METHODS FOR USING THIN PROVISIONING TO RECLAIM SPACE IDENTIFIED BY DATA REDUCTION PROCESSES | EMC Corporation |
| 12643109 | 8606751 | SYSTEM AND METHOD FOR BACKUP BY INODE NUMBER | EMC Corporation |
| 12643199 | 8458780 | PLUGGABLE LOGIN ARCHITECTURE AND DYNAMIC RESOURCE RECOGNITION | EMC Corporation |
| 12644033 | 8749966 | DATA STORAGE DRIVE CARRIER | EMC Corporation |
| 12644195 | 8826033 | DATA PROTECTION USING VIRTUAL-MACHINE-SPECIFIC STABLE SYSTEM VALUES | EMC Corporation |
| 12644237 | 8326919 | NETWORK ADDRESS TRANSLATION AUTO-DISCOVERY IN DATA STORAGE NETWORKS | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 12644849 | 9323758 | EFFICIENT MIGRATION OF REPLICATED FILES FROM A FILE SERVER HAVING A FILE DE-DUPLICATION FACILITY | EMC Corporation |
| 12644921 | 8327189 | DIAGNOSING AN INCIDENT ON A COMPUTER SYSTEM USING A DIAGNOSTICS ANALYZER DATABASE | EMC Corporation |
| 12645857 | 8555342 | PROVIDING SECURE ACCESS TO A SET OF CREDENTIALS WITHIN A DATA SECURITY MECHANISM OF A DATA STORAGE SYSTEM | EMC Corporation |
| 12646294 | 8510409 | APPLICATION-SPECIFIC OUTBOUND SOURCE ROUTING FROM A HOST IN A DATA NETWORK | EMC Corporation |
| 12646457 | 8180973 | SERVICING INTERRUPTS AND SCHEDULING CODE THREAD EXECUTION IN A MULTI-CPU NETWORK FILE SERVER | EMC Corporation |
| 12647450 | 8271441 | VIRTUALIZED CG | EMC Corporation |
| 12647857 | 8074003 | HOST-BASED STORAGE CONTROLLER PROVIDING BLOCK DEVICES IN GEOGRAPHICALLY DISTRIBUTED STORAGE | EMC Corporation |
| 12647867 | 8429346 | AUTOMATED DATA RELOCATION AMONG STORAGE TIERS BASED ON STORAGE LOAD | EMC Corporation |
| 12649113 | 8478936 | SPIN DOWN OF STORAGE RESOURCES IN AN OBJECT ADDRESSABLE STORAGE SYSTEM | EMC Corporation |
| 12649373 | 9213367 | KIT FOR SHIPPING AN ELECTRICAL CABINET | EMC Corporation |
| 12653107 | 8260749 | TRAVERSING DATA IN A REPEATABLE MANNER | EMC Corporation |
| 12653162 | 8438342 | AUTOMATED APPLICATION-BASED STORAGE PROVISIONING | EMC Corporation |
| | | | |
| 12653313 | 8751448 | STATE-BASED DIRECTING OF SEGMENTS IN A MULTINODE DEDUPLICATED STORAGE SYSTEM | EMC Corporation |
| 12653505 | 8335820 | TECHNIQUES FOR PERSISTENCE OF CONNECTIONS | EMC Corporation |
| 12653790 | 8700669 | TECHNIQUES FOR DATA STORAGE SYSTEMS MANAGEMENT | EMC Corporation |
| 12653909 | 8028140 | SAVE SET BUNDLING FOR STAGING | EMC Corporation |
| 12653981 | 8307362 | RESOURCE ALLOCATION IN A VIRTUALIZED ENVIRONMENT | EMC Corporation |
| 12658561 | 8560786 | EFFICIENT USE OF MEMORY AND ACCESSING OF STORED RECORDS | EMC Corporation |
| 12658635 | | [REDACTED] | EMC Corporation |
| 12661142 | 8396873 | INDEX SEARCHING USING A BLOOM FILTER | EMC Corporation |
| 12661493 | 7937372 | SNAPSHOT INDEXING | EMC Corporation |
| 12661894 | 8352431 | FINE-GRAIN POLICY-BASED SNAPSHOTS | EMC Corporation |
| 12661911 | 8504787 | TECHNIQUES FOR DETERMINING DATA PROTECTION STORAGE REQUIREMENTS | EMC Corporation |
| 12688018 | 8291183 | ASSISTED MAINFRAME DATA DE-DUPLICATION | EMC Corporation |
| 12695250 | 8762642 | SYSTEM AND METHOD FOR SECURE AND RELIABLE MULTI-CLOUD DATA REPLICATION | EMC Corporation |
| 12700085 | 8285673 | METHODS AND APPARATUS FOR PROCESSING PARTITIONED CHANGES | EMC Corporation |
| 12704285 | 9058334 | PARALLEL FILE SYSTEM PROCESSING | EMC Corporation |
| 12713553 | 8055861 | METHODS AND APPARATUS FOR MANAGING DELETION OF DATA | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 12716110 | 8181065 | SYSTEMS AND METHODS FOR PROVIDING NONLINEAR JOURNALING | EMC Corporation |
| 12717840 | 8010493 | SYSTEMS AND METHODS FOR A SNAPSHOT OF DATA | EMC Corporation |
| 12717869 | 8015156 | SYSTEMS AND METHODS FOR A SNAPSHOT OF DATA | EMC Corporation |
| 12728081 | 8706755 | SYSTEM AND METHODS FOR PROVIDING A DISTRIBUTED FILE SYSTEM UTILIZING METADATA TO TRACK INFORMATION ABOUT DATA STORED THROUGHOUT THE SYSTEM | EMC Corporation |
| 12730275 | 8352661 | DATA STORAGE SYSTEMS HAVING SEAMLESS SOFTWARE UPGRADES | EMC Corporation |
| 12730529 | | [REDACTED] | EMC Corporation |
| 12731945 | 8959054 | METHODS AND APPARATUS FOR OPTIMAL JOURNALING FOR CONTINUOUS DATA REPLICATION | EMC Corporation |
| 12732330 | 8627138 | DATA PROTECTION SYSTEM AND METHOD | EMC Corporation |
| 12748492 | 8560788 | METHOD OF PERFORMING BACKUPS USING MULTIPLE STREAMS | EMC Corporation |
| 12748493 | 8166348 | METHOD OF DEBUGGING A SOFTWARE SYSTEM | EMC Corporation |
| 12748538 | | [REDACTED] | EMC Corporation |
| 12748566 | | [REDACTED] | EMC Corporation |
| 12748619 | 8452980 | DEFEATING REAL-TIME TROJAN LOGIN ATTACK WITH DELAYED INTERACTION WITH FRAUDSTER | EMC Corporation |
| 12748690 | 8601552 | PERSONAL IDENTIFICATION PAIRS | EMC Corporation |
| 12750382 | 8370592 | MULTI-MACHINE ATOMIC SEAMLESS MIGRATION | EMC Corporation |
| 12750388 | 8301811 | TECHNIQUES FOR PERFORMING ONLINE DATA MIGRATION WHILE EFFECTIVELY MIGRATING SCSI RESERVATIONS BETWEEN SOURCE AND TARGET ARRAYS | EMC Corporation |
| 12750391 | 8392753 | AUTOMATIC FAILOVER DURING ONLINE DATA MIGRATION | EMC Corporation |
| 12750758 | 8412928 | ONE-TIME PASSWORD AUTHENTICATION EMPLOYING LOCAL TESTING OF CANDIDATE PASSWORDS FROM ONE-TIME PASSWORD SERVER | EMC Corporation |
| 12750919 | 8452816 | MANAGING DATABASE ACCESS | EMC Corporation |
| 12751008 | 8407720 | INTER-PROCESS COMMUNICATION MANAGEMENT | EMC Corporation |
| 12751010 | 8347219 | OBJECT LEVEL DISPLAY BUILDING | EMC Corporation |
| 12751057 | 8370389 | TECHNIQUES FOR AUTHENTICATING USERS OF MASSIVE MULTIPLAYER ONLINE ROLE PLAYING GAMES USING ADAPTIVE AUTHENTICATION | EMC Corporation |
| 12751058 | | [REDACTED] | EMC Corporation |
| 12751093 | 8539124 | STORAGE INTEGRATION PLUGIN FOR VIRTUAL SERVERS | EMC Corporation |
| 12751124 | 9317820 | SYSTEM AND METHOD FOR CONFIGURING A CLOUD COMPUTING SPACE | EMC Corporation |
| 12751155 | 8151021 | UPGRADING SOFTWARE ON A CLUSTER OF COMPUTERIZED DEVICES | EMC Corporation |
| 12751243 | | [REDACTED] | EMC Corporation |
| 12751405 | 8762374 | TASK DRIVEN CONTEXT-AWARE SEARCH | EMC Corporation |
| 12751455 | 8478731 | MANAGING COMPRESSION IN DATA STORAGE SYSTEMS | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 12751665 | 8407445 | METHOD FOR TRIGGERING AND COORDINATING POOL STORAGE RECLAMATION | EMC Corporation |
| 12751685 | 8924681 | SYSTEMS, METHODS, AND COMPUTER READABLE MEDIA FOR AN ADAPTIVE BLOCK ALLOCATION MECHANISM | EMC Corporation |
| 12751707 | 8751740 | SYSTEMS, METHODS, AND COMPUTER READABLE MEDIA FOR PERFORMANCE OPTIMIZATION OF STORAGE ALLOCATION TO VIRTUAL LOGICAL UNITS | EMC Corporation |
| 12751748 | 8103937 | CAS COMMAND NETWORK REPLICATION | EMC Corporation |
| 12751783 | 8380926 | HANDLING SECTOR EDGES | EMC Corporation |
| 12751799 | 8751715 | SYSTEM AND METHOD FOR CONTROLLING DEVICE ACCESS | EMC Corporation |
| 12751831 | 8086638 | FILE HANDLE BANKING TO PROVIDE NON-DISRUPTIVE MIGRATION OF FILES | EMC Corporation |
| 12751934 | 8510265 | CONFIGURATION UTILITY FOR A DATA STORAGE SYSTEM USING A FILE MAPPING PROTOCOL FOR ACCESS TO DISTRIBUTED FILE SYSTEMS | EMC Corporation |
| 12752031 | 8037345 | DETERMINISTIC RECOVERY OF A FILE SYSTEM BUILT ON A THINLY PROVISIONED LOGICAL VOLUME HAVING REDUNDANT METADATA | EMC Corporation |
| 12752052 | 8655966 | MOBILE DEVICE DATA PROTECTION | EMC Corporation |
| 12752059 | 9152650 | MOBILE DEVICE DATA RECOVERY | EMC Corporation |
| 12752064 | 8694597 | MOBILE DEVICE GROUP-BASED DATA SHARING | EMC Corporation |
| 12752066 | | [REDACTED] | EMC Corporation |
| 12752068 | 8683005 | CACHE-BASED MOBILE DEVICE NETWORK RESOURCE OPTIMIZATION | EMC Corporation |
| 12752069 | 8694744 | MOBILE DEVICE SNAPSHOT BACKUP | EMC Corporation |
| 12752072 | | [REDACTED] | EMC Corporation |
| 12761751 | 8549649 | SYSTEMS AND METHODS FOR SENSITIVE DATA REMEDIATION | EMC Corporation |
| 12762769 | 8024538 | HIGH EFFICIENCY PORTABLE ARCHIVE | EMC Corporation |
| 12775743 | 8028191 | METHODS AND SYSTEMS FOR IMPLEMENTING SHARED DISK ARRAY MANAGEMENT FUNCTIONS | EMC Corporation |
| 12780001 | 7958305 | SYSTEM AND METHOD FOR MANAGING STORAGE NETWORKS AND PROVIDING VIRTUALIZATION OF RESOURCES IN SUCH A NETWORK | EMC Corporation |
| 12787297 | 8112395 | SYSTEM AND METHODS FOR PROVIDING A DISTRIBUTED FILE SYSTEM UTILIZING METADATA TO TRACK INFORMATION ABOUT DATA STORED THROUGHOUT THE SYSTEM | EMC Corporation |
| 12789393 | 8005865 | SYSTEMS AND METHODS FOR NOTIFYING LISTENERS OF EVENTS | EMC Corporation |
| 12794492 | 7844617 | SYSTEMS AND METHODS OF DIRECTORY ENTRY ENCODINGS | EMC Corporation |
| 12798034 | 8862832 | TECHNIQUES FOR GLOBAL MEMORY MANAGEMENT AND REQUEST PROCESSING | EMC Corporation |
| 12798035 | 8375174 | TECHNIQUES FOR USE WITH MEMORY PARTITIONING AND MANAGEMENT | EMC Corporation |
| 12798036 | | [REDACTED] | EMC Corporation |
| 12798097 | 8433848 | ANALYSIS TOOL FOR A MULTI-TIER STORAGE ENVIRONMENT | EMC Corporation |

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|---|---|---|---|
| 12798234 | 8725767 | MULTI-DIMENSIONAL OBJECT MODEL FOR STORAGE MANAGEMENT | EMC Corporation |
| 12798597 | | SYSTEM AND METHOD FOR SECURING TENANT DATA ON A LOCAL APPLIANCE PRIOR TO DELIVERY TO A SAAS DATA CENTER HOSTED APPLICATION SERVICE | EMC Corporation |
| 12798730 | 8086255 | DATA MESSAGE PROCESSING | EMC Corporation |
| 12799513 | | [REDACTED] | EMC Corporation |
| 12800399 | 9135016 | SAFE OBJECT REPLICATION AND RESTORE IN A FEDERATION OF OBJECT STORAGE | EMC Corporation |
| 12800448 | | [REDACTED] | EMC Corporation |
| 12802072 | 8037013 | COOPERATIVE LOCKING BETWEEN MULTIPLE INDEPENDENT OWNERS OF DATA SPACE | EMC Corporation |
| 12803393 | 8396839 | REPRESENTING DE-DUPLICATED FILE DATA | EMC Corporation |
| 12803470 | | [REDACTED] | EMC Corporation |
| 12803497 | 8812423 | OBJECT QUALIFIERS FOR MULTI-DIMENSIONAL OBJECT MODEL | EMC Corporation |
| 12803498 | 8281033 | TECHNIQUES FOR PATH SELECTION | EMC Corporation |
| 12803570 | 9003157 | TECHNIQUES FOR DYNAMIC DATA STORAGE CONFIGURATION IN ACCORDANCE WITH AN ALLOCATION POLICY | EMC Corporation |
| 12803571 | 8566553 | TECHNIQUES FOR AUTOMATED EVALUATION AND MOVEMENT OF DATA BETWEEN STORAGE TIERS | EMC Corporation |
| 12803592 | 8874726 | AUTOMATED LOAD BALANCING | EMC Corporation |
| 12803604 | 8321487 | RECOVERY OF DIRECTORY INFORMATION | EMC Corporation |
| 12804349 | 8489559 | METHODS AND APPARATUS FOR CONVERSION OF CONTENT | EMC Corporation |
| | | | |
| 12804877 | 8447923 | WRITE INTERCEPTOR FOR TRACKING CHANGES TO A DISK IMAGE | EMC Corporation |
| 12807943 | 8467281 | TECHNIQUES FOR IDENTIFYING DEVICES HAVING SLOW RESPONSE TIMES | EMC Corporation |
| 12818577 | 8402226 | RATE PROPORTIONAL CACHE WRITE-BACK IN A STORAGE SYSTEM | EMC Corporation |
| 12819767 | 8862560 | COMPRESSION SYSTEM PAUSE AND AUTO-RESUME | EMC Corporation |
| 12820829 | 8433914 | MULTI-CHANNEL TRANSACTION SIGNING | EMC Corporation |
| 12821418 | 8332687 | SPLITTER USED IN A CONTINUOUS DATA PROTECTION ENVIRONMENT | EMC Corporation |
| 12821695 | 8504684 | CONTROL OF DATA STORAGE SYSTEM MANAGEMENT APPLICATION ACTIVATION | EMC Corporation |
| 12822173 | 9330105 | SYSTEMS, METHODS, AND COMPUTER READABLE MEDIA FOR LAZY COMPRESSION OF DATA INCOMING TO A DATA STORAGE ENTITY | EMC Corporation |
| 12823636 | 8751827 | APPARATUS FOR CONTROLLING EMBEDDED SECURITY ON A STORAGE PLATFORM | EMC Corporation |
| 12824380 | 8327103 | SCHEDULING DATA RELOCATION ACTIVITIES USING CONFIGURABLE FAIRNESS CRITERIA | EMC Corporation |
| 12824816 | 8443163 | METHODS, SYSTEMS AND COMPUTER READABLE MEDIUM FOR TIER-BASED DATA STORAGE RESOURCE ALLOCATION AND DATA RELOCATION IN A DATA STORAGE ARRAY | EMC Corporation |

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|---|---|---|---|
| 12824966 | 8479046 | SYSTEMS, METHODS, AND COMPUTER READABLE MEDIA FOR TRACKING POOL STORAGE SPACE RESERVATIONS | EMC Corporation |
| 12825907 | | [REDACTED] | EMC Corporation |
| 12825930 | 9047106 | MANAGING APPLICATION FEATURES | EMC Corporation |
| 12826131 | 8407191 | PRIORITY BASED DATA SCRUBBING ON A DEDUPLICATED DATA STORE | EMC Corporation |
| 12826185 | 9043533 | SIZING VOLATILE MEMORY CACHE BASED ON FLASH-BASED CACHE USAGE | EMC Corporation |
| 12826203 | 8456832 | DATA STORAGE DRIVE CARRIER | EMC Corporation |
| 12826385 | 9311002 | SYSTEMS, METHODS, AND COMPUTER READABLE MEDIA FOR COMPRESSING DATA AT A VIRTUALLY PROVISIONED STORAGE ENTITY | EMC Corporation |
| 12826434 | 8473678 | MANAGING MULTI-TIERED STORAGE POOL PROVISIONING | EMC Corporation |
| 12826466 | 8452965 | SELF-IDENTIFICATION OF TOKENS | EMC Corporation |
| 12826481 | 8601553 | TECHNIQUES OF IMPOSING ACCESS CONTROL POLICIES | EMC Corporation |
| 12826491 | 8655787 | AUTOMATED DETECTION OF DEFINED INPUT VALUES AND TRANSFORMATION TO TOKENS | EMC Corporation |
| 12826534 | | [REDACTED] | EMC Corporation |
| 12826749 | 8429307 | APPLICATION AWARE INTELLIGENT STORAGE SYSTEM | EMC Corporation |
| 12826833 | | [REDACTED] | EMC Corporation |
| 12826935 | 8560837 | AUTOMATICALLY ESTIMATING CLOCK OFFSET | EMC Corporation |
| 12826994 | 8973021 | METHOD AND SYSTEM OF FACILITATING JAVA COMMUNICATION | EMC Corporation |
| 12827025 | 8713160 | AUTOMATED TOP-DOWN MULTI-ABSTRACTION INFRASTRUCTURE PERFORMANCE ANALYTICS - NETWORK INFRASTRUCTURE-AS-A-SERVICE PERSPECTIVE | EMC Corporation |
| 12827045 | 8627424 | DEVICE BOUND OTP GENERATION | EMC Corporation |
| 12827092 | 8381213 | METHOD FOR DYNAMIC MANAGEMENT OF SYSTEM RESOURCES THROUGH APPLICATION HINTS | EMC Corporation |
| 12827097 | 8984384 | DISTRIBUTED STORAGE SYSTEM WITH EFFICIENT HANDLING OF FILE UPDATES | EMC Corporation |
| 12827400 | 8683495 | SYNC POINT COORDINATION PROVIDING HIGH THROUGHPUT JOB PROCESSING ACROSS DISTRIBUTED VIRTUAL INFRASTRUCTURE | EMC Corporation |
| 12828034 | 8595749 | SYSTEM AND METHOD FOR CATALOGING DATA | EMC Corporation |
| 12828111 | 8612680 | DATA CACHING SYSTEM AND METHOD | EMC Corporation |
| 12828198 | 9367561 | PRIORITIZED BACKUP SEGMENTING | EMC Corporation |
| 12828205 | 9235585 | DYNAMIC PRIORITIZED RECOVERY | EMC Corporation |
| 12828213 | | DATA ACCESS DURING DATA RECOVERY | EMC Corporation |
| 12828218 | 8438420 | POST ACCESS DATA PRESERVATION | EMC Corporation |
| 12828279 | 9239860 | AUGMENTING VIRTUAL DIRECTORIES | EMC Corporation |
| 12828284 | 9244969 | VIRTUAL DISK RECOVERY | EMC Corporation |
| 12828609 | 7992038 | FAILURE PROTECTION IN AN ENVIRONMENT INCLUDING VIRTUALIZATION OF NETWORKED STORAGE RESOURCES | EMC Corporation |
| 12832658 | | [REDACTED] | EMC Corporation |

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|---|---|---|---|
| 12832904 | 8015216 | SYSTEMS AND METHODS FOR PROVIDING POSSIBLE VALUE RANGES | EMC Corporation |
| 12834535 | 8244680 | ACTIVE DIRECTORY CONTAINER RECOVERY | EMC Corporation |
| 12834705 | 8131705 | RELEVANCY SCORING USING QUERY STRUCTURE AND DATA STRUCTURE FOR FEDERATED SEARCH | EMC Corporation |
| 12834710 | 8131716 | TUNING OF RELEVANCY RANKING FOR FEDERATED SEARCH | EMC Corporation |
| 12837439 | 8214334 | SYSTEMS AND METHODS FOR DISTRIBUTED SYSTEM SCANNING | EMC Corporation |
| 12838167 | | [REDACTED] | EMC Corporation |
| 12847559 | 9336111 | SYSTEM AND METHOD FOR STORING DATA | EMC Corporation |
| 12850239 | 8185554 | STORAGE OF DATA WITH COMPOSITE HASHES IN BACKUP SYSTEMS | EMC Corporation |
| 12854641 | 8370899 | DISPOSABLE BROWSER FOR COMMERCIAL BANKING | EMC Corporation |
| 12857703 | 8255477 | SYSTEMS AND METHODS FOR IMPLEMENTING CONTENT SENSITIVE ROUTING OVER A WIDE AREA NETWORK (WAN) | EMC Corporation |
| 12862060 | 8214400 | SYSTEMS AND METHODS FOR MAINTAINING DISTRIBUTED DATA | EMC Corporation |
| | | | |
| 12880307 | 8082465 | AUTO-ADAPTING CACHE MEMORY SYSTEM AND METHOD | EMC Corporation |
| 12882081 | 8635423 | METHODS AND APPARATUS FOR INTERFACING TO A DATA STORAGE SYSTEM | EMC Corporation |
| 12882234 | 8693212 | CHASSIS COVER HAVING OPTICAL OPEN-CLOSE DETECTOR | EMC Corporation |
| 12884577 | 8667478 | BACKWARD-COMPATIBILITY USING A PLUGIN ARCHITECTURE | EMC Corporation |
| 12887402 | 8677052 | SNAPSHOTTING OF A PERFORMANCE STORAGE SYSTEM IN A SYSTEM FOR PERFORMANCE IMPROVEMENT OF A CAPACITY OPTIMIZED STORAGE SYSTEM | EMC Corporation |
| 12887404 | 9141300 | PERFORMANCE IMPROVEMENT OF A CAPACITY OPTIMIZED STORAGE SYSTEM USING A PERFORMANCE SEGMENT STORAGE SYSTEM AND A SEGMENT STORAGE SYSTEM | EMC Corporation |
| 12887414 | 8447726 | PERFORMANCE IMPROVEMENT OF A CAPACITY OPTIMIZED STORAGE SYSTEM USING A PERFORMANCE SEGMENT STORAGE SYSTEM INCLUDING A DETERMINER | EMC Corporation |
| 12888943 | 8756370 | NON-DISRUPTIVE DRIVE FIRMWARE UPGRADES | EMC Corporation |
| 12889477 | 9292216 | MANAGING POOL ALLOCATION | EMC Corporation |
| 12890688 | 8527455 | SEEDING REPLICATION | EMC Corporation |
| 12892069 | | [REDACTED] | EMC Corporation |
| 12892081 | 8327080 | WRITE-BACK CACHE PROTECTION | EMC Corporation |
| 12892333 | 8381027 | DETERMINING ALTERNATE PATHS IN FAULTED SYSTEMS | EMC Corporation |
| 12892812 | 8204871 | EXTENDED FILE MAPPING CACHE FOR FAST INPUT-OUTPUT | EMC Corporation |
| 12893034 | 8527626 | MANAGING SYSTEM POLLING | EMC Corporation |
| 12893347 | 8635707 | MANAGING OBJECT ACCESS | EMC Corporation |

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|---|---|---|---|
| 12893600 | 8694700 | USING I/O TRACK INFORMATION FOR CONTINUOUS PUSH WITH SPLITTER FOR STORAGE DEVICE | EMC Corporation |
| 12893684 | 8499157 | DEVICE-BASED PASSWORD MANAGEMENT | EMC Corporation |
| 12893697 | 8984031 | MANAGING DATA STORAGE FOR DATABASES BASED ON APPLICATION AWARENESS | EMC Corporation |
| 12893716 | 8219724 | FLEXIBLY MANAGING I\O OPERATIONS BASED ON APPLICATION AWARENESS | EMC Corporation |
| 12893854 | 8683153 | ITERATING FOR DEDUPLICATION | EMC Corporation |
| 12893865 | 8775388 | SELECTING ITERATION SCHEMES FOR DEDUPLICATION | EMC Corporation |
| 12894267 | 8370862 | COMMUNICATING BETWEEN SOFTWARE ENVIRONMENTS | EMC Corporation |
| 12894282 | 8910144 | MANAGING SOFTWARE ENVIRONMENT INSTALLATION | EMC Corporation |
| 12894406 | | [REDACTED] | EMC Corporation |
| 12894502 | 8453232 | VIRTUAL SMART CARD THROUGH A PC/SC INTERFACE | EMC Corporation |
| 12894506 | 8751537 | INTEGRATED AND UNIFIED ONLINE HELP | EMC Corporation |
| 12894515 | 8799375 | UNALTERABLE NOTIFICATION SERVICE | EMC Corporation |
| 12894660 | 8756441 | DATA CENTER ENERGY MANAGER FOR MONITORING POWER USAGE IN A DATA STORAGE ENVIRONMENT HAVING A POWER MONITOR AND A MONITOR MODULE FOR CORRELATING ASSOCIATIVE INFORMATION ASSOCIATED WITH POWER CONSUMPTION | EMC Corporation |
| 12894763 | 9116905 | SYSTEM AND METHOD FOR CATALOGING DATA | EMC Corporation |
| 12895021 | 8683167 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 12895053 | 8595438 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 12895130 | 8312519 | AGILE OTP GENERATION | EMC Corporation |
| 12895174 | 8959173 | NON-DISRUPTIVE LOAD-BALANCING OF VIRTUAL MACHINES BETWEEN DATA CENTERS | EMC Corporation |
| 12895184 | 8725848 | MULTIPATH DISTRIBUTION | EMC Corporation |
| 12895198 | 8458509 | MULTIPATH FAILOVER | EMC Corporation |
| 12895219 | | [REDACTED] | EMC Corporation |
| 12895232 | 9047128 | EFFICIENT INTERFACE ADDITION | EMC Corporation |
| 12895619 | 8356150 | SYSTEMS AND METHODS FOR PROVIDING NONLINEAR JOURNALING | EMC Corporation |
| 12895667 | 7984253 | ARCHITECTURE FOR VIRTUALIZATION OF NETWORKED STORAGE RESOURCES | EMC Corporation |
| 12895827 | 9235593 | TRANSMITTING FILESYSTEM CHANGES OVER A NETWORK BACKGROUND OF THE INVENTION | EMC Corporation |
| 12895836 | 8504870 | OPTIMIZED RECOVERY | EMC Corporation |
| 12895838 | 9195549 | UNIFIED RECOVERY | EMC Corporation |
| 12895840 | 8549350 | MULTI-TIER RECOVERY | EMC Corporation |
| 12895841 | 8484505 | SELF RECOVERY | EMC Corporation |
| 12907625 | 8618913 | RADIO FREQUENCY INDENTIFICATION ENABLED MOBILE DEVICE | EMC Corporation |
| 12908379 | 8605590 | SYSTEMS AND METHODS OF IMPROVING PERFORMANCE OF TRANSPORT PROTOCOLS | EMC Corporation |

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|---|---|---|---|
| 12908811 | | [REDACTED] | EMC Corporation |
| 12909089 | 8739285 | DIFFERENTIAL VIRUS SCAN | EMC Corporation |
| 12910758 | 8527568 | EFFICIENT COMPUTATION OF SKETCHES | EMC Corporation |
| 12917180 | 8625464 | SYSTEMS AND METHODS FOR PROVIDING A QUIESCING PROTOCOL | EMC Corporation |
| 12917910 | 8095577 | MANAGING METADATA | EMC Corporation |
| 12924345 | 8924675 | SELECTIVE MIGRATION OF PHYSICAL DATA | EMC Corporation |
| 12924361 | 8868798 | TECHNIQUES FOR MODELING DISK PERFORMANCE | EMC Corporation |
| 12924388 | | [REDACTED] | EMC Corporation |
| 12924396 | 8583838 | TECHNIQUES FOR STATISTICS COLLECTION IN CONNECTION WITH DATA STORAGE PERFORMANCE. | EMC Corporation |
| 12924430 | 8566546 | TECHNIQUES FOR ENFORCING CAPACITY RESTRICTIONS OF AN ALLOCATION POLICY | EMC Corporation |
| 12924474 | 9176677 | VIRTUAL PROVISIONING SPACE RESERVATION | EMC Corporation |
| 12924544 | 8707003 | RATE CONTROL FOR ASYNCHRONOUS DATA REPLICATION | EMC Corporation |
| 12924568 | 8479204 | TECHNIQUES FOR DETERMINING TRANSACTION PROGRESS | EMC Corporation |
| 12924571 | 8850453 | TECHNIQUES FOR EVENT FILTERING | EMC Corporation |
| 12924572 | 8316161 | TECHNIQUES FOR INDICATING A PASSIVE PATH STATE FOR A DEVICE | EMC Corporation |
| 12924588 | 8438315 | TECHNIQUES FOR NON-DISRUPTIVE UPGRADE | EMC Corporation |
| 12925040 | 8041684 | TECHNIQUES FOR DETERMINING AN IMPLEMENTED DATA PROTECTION POLICY | EMC Corporation |
| 12925709 | 8732364 | TRANSFER OF DATA STORAGE DEVICE FEATURES | EMC Corporation |
| 12928283 | 8250257 | TECHNIQUES FOR BALANCING SYSTEM I/O LOAD | EMC Corporation |
| 12928649 | 8595535 | TECHNIQUES FOR MANAGING DATA STORAGE SYSTEMS USING ENERGY INFORMATION | EMC Corporation |
| 12928653 | 8447729 | TECHNIQUES FOR PERFORMING INDICATION MANAGEMENT | EMC Corporation |
| 12928661 | 8239584 | TECHNIQUES FOR AUTOMATED STORAGE MANAGEMENT | EMC Corporation |
| 12930101 | 8935490 | DISK ACCESS QUALITY OF SERVICE | EMC Corporation |
| 12930102 | 8670453 | ISOLATING NETWORK TRAFFIC IN MULTI-TENNANT VIRTUALIZATION ENVIRONMENTS | EMC Corporation |
| 12930121 | 8578204 | WITNESS FACILITY FOR DISTRIBUTED STORAGE SYSTEM | EMC Corporation |
| 12930247 | | [REDACTED] | EMC Corporation |
| 12930249 | 8682955 | FULLY AUTOMATED CLOUD TIERING CONTROLLED BY AN ORCHESTRATION LAYER BASED ON DYNAMIC INFORMATION | EMC Corporation |
| 12930251 | 8468180 | PORTING STORAGE METADATA | EMC Corporation |
| 12931386 | 8321921 | METHOD AND APPARATUS FOR PROVIDING AUTHENTICATION AND ENCRYPTION SERVICES BY A SOFTWARE AS A SERVICE PLATFORM | EMC Corporation |
| 12932080 | 9110693 | VM MOBILITY OVER DISTANCE | EMC Corporation |
| 12932827 | | [REDACTED] | EMC Corporation |
| 12943042 | 8935560 | SYSTEM AND METHOD OF FILE LOCKING WITHIN A NETWORK FILE SYSTEM FEDERATED NAMESPACE | EMC Corporation |

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|---|---|---|---|
| 12945915 | 9104326 | SCALABLE BLOCK DATA STORAGE USING CONTENT ADDRESSING | EMC Corporation |
| 12946665 | 8060521 | SYSTEMS AND METHODS OF DIRECTORY ENTRY ENCODINGS | EMC Corporation |
| 12950996 | 8407265 | HIERARCHICAL MAPPING OF FREE BLOCKS OF CYLINDER GROUPS OF FILE SYSTEMS BUILT ON SLICES OF STORAGE AND LINKING OF THE FREE BLOCKS | EMC Corporation |
| 12955533 | 8527638 | SYSTEM MANAGEMENT VIA SESSION INITIATION PROTOCOL | EMC Corporation |
| 12959575 | 9009404 | VIEWING COMPRESSION AND MIGRATION STATUS | EMC Corporation |
| 12960793 | 8959249 | COOPERATIVE CLOUD I/O SCHEDULER | EMC Corporation |
| 12962819 | 8214406 | BACKUP OF INCREMENTAL METADATA IN BLOCK BASED BACKUP SYSTEMS | EMC Corporation |
| 12965748 | 8176013 | SYSTEMS AND METHODS FOR ACCESSING AND UPDATING DISTRIBUTED DATA | EMC Corporation |
| 12966284 | 8296855 | PRIVILEGED ACCESS TO ENCRYPTED DATA | EMC Corporation |
| 12966415 | 8700832 | AUTOMATED ADDITION OF FILE BASED HARDWARE AND FILE BASED ACCESS SERVICES IN A DATA STORAGE SYSTEM | EMC Corporation |
| 12967239 | 8934940 | PROVIDING ENHANCED SECURITY FOR WIRELESS TELECOMMUNICATIONS DEVICES | EMC Corporation |
| 12968854 | 8626484 | LIGHT-WEIGHT AND FLEXIBLE FEATURE SIMULATOR | EMC Corporation |
| 12969888 | 8850143 | POINT IN TIME ACCESS IN A REPLICATION ENVIRONMENT WITH LUN RESIZING | EMC Corporation |
| 12969893 | 8447782 | DATA ACCESS LAYER HAVING A MAPPING MODULE FOR TRANSFORMATION OF DATA INTO COMMON INFORMATION MODEL COMPLIANT OBJECTS | EMC Corporation |
| 12969903 | 8725691 | DYNAMIC LUN RESIZING IN A REPLICATION ENVIRONMENT | EMC Corporation |
| 12969920 | | [REDACTED] | EMC Corporation |
| 12969944 | 8725692 | REPLICATION OF XCOPY COMMAND | EMC Corporation |
| 12970795 | 7971021 | SYSTEMS AND METHODS FOR MANAGING STALLED STORAGE DEVICES | EMC Corporation |
| 12971041 | 8874696 | COMMON CACHE SERVICE | EMC Corporation |
| 12971792 | 8516149 | SYSTEM FOR OPERATING NFSV2 AND NFSV3 CLIENTS WITH FEDERATED NAMESPACE | EMC Corporation |
| 12972260 | 8356013 | SYSTEMS AND METHODS FOR A SNAPSHOT OF DATA | EMC Corporation |
| 12973284 | | [REDACTED] | EMC Corporation |
| 12973599 | | [REDACTED] | EMC Corporation |
| 12974013 | | [REDACTED] | EMC Corporation |
| 12974732 | 8528049 | TECHNIQUES OF PROVIDING AUTHENTICATION FROM COMPUTER POINTER INTERACTIONS | EMC Corporation |
| 12974756 | 8683452 | DYNAMICALLY OBFUSCATED JAVASCRIPT | EMC Corporation |
| 12974768 | | [REDACTED] | EMC Corporation |
| 12975048 | 8126844 | MULTI-THREAD REPLICATION ACROSS A NETWORK | EMC Corporation |
| 12975474 | | [REDACTED] | EMC Corporation |
| 12975716 | 9081771 | ENCRYPTING IN DEDUPLICATION SYSTEMS | EMC Corporation |

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|---|---|---|---|
| 12976229 | 8774530 | AUTOMATED DIAGNOSTIC ANALYSIS OF IMAGE DATA | EMC Corporation |
| 12976575 | 9306741 | UPDATING KEYS FOR USE IN AUTHENTICATION | EMC Corporation |
| 12976632 | 8539148 | DEDUPLICATION EFFICIENCY | EMC Corporation |
| 12977251 | 8706700 | CREATING CONSISTENT SNAPSHOTS ACROSS SEVERAL STORAGE ARRAYS OR FILE SYSTEMS | EMC Corporation |
| 12977295 | 8738681 | HIERARCHICAL COOPERATIVE STORAGE SERVICES | EMC Corporation |
| 12977604 | 9075668 | METHOD, APPARATUS AND SYSTEM FOR INTEGRATING DYNAMIC RECOGNITION OF COMPLEX EVENTS WITH CASE-BASED PROCESSING | EMC Corporation |
| 12977616 | | [REDACTED] | EMC Corporation |
| 12977651 | 8495304 | MULTI SOURCE WIRE DEDUPLICATION | EMC Corporation |
| 12977680 | | [REDACTED] | EMC Corporation |
| 12977789 | 8751828 | SHARING ENCRYPTION-RELATED METADATA BETWEEN MULTIPLE LAYERS IN A STORAGE I/O STACK | EMC Corporation |
| 12977906 | | [REDACTED] | EMC Corporation |
| 12977962 | 8566637 | ANALYZING DRIVE ERRORS IN DATA STORAGE SYSTEMS | EMC Corporation |
| 12977971 | 8798262 | PRESERVING LBA INFORMATION BETWEEN LAYERS OF A STORAGE I/O STACK FOR LBA-DEPENDENT ENCRYPTION | EMC Corporation |
| 12978017 | 8726405 | TECHNIQUES FOR PROVIDING SECURITY USING A MOBILE WIRELESS COMMUNICATIONS DEVICE HAVING DATA LOSS PREVENTION CIRCUITRY | EMC Corporation |
| 12978055 | 8635447 | MANAGING CERTIFICATES BETWEEN SOFTWARE ENVIRONMENTS | EMC Corporation |
| 12978096 | 8782782 | COMPUTER SYSTEM WITH RISK-BASED ASSESSMENT AND PROTECTION AGAINST HARMFUL USER ACTIVITY | EMC Corporation |
| 12978332 | | [REDACTED] | EMC Corporation |
| 12978887 | 8260974 | TECHNIQUES FOR ACCELERATING THE PROCESSING OF ENCLOSURES IN SAS DISK STORAGE ARRAYS | EMC Corporation |
| 12979402 | 7992713 | DISK DRIVE PACKAGE | EMC Corporation |
| 12979450 | 9037512 | INFORMATION TECHNOLOGY RESOURCE ALLOCATION AND UTILIZATION TRACKING IN A CLOUD-BASED SYSTEM | EMC Corporation |
| 12980421 | 8620882 | TOKENIZATION OF MULTIPLE-FIELD RECORDS | EMC Corporation |
| 12980567 | 8856954 | AUTHENTICATING USING ORGANIZATION BASED INFORMATION | EMC Corporation |
| 12980621 | 9323819 | FACILITATING VALID DATA ENTRY | EMC Corporation |
| 12980853 | | [REDACTED] | EMC Corporation |
| 12980932 | 8683260 | MANAGING OWNERSHIP OF LOGICAL VOLUMES | EMC Corporation |
| 12980958 | | [REDACTED] | EMC Corporation |
| 12981050 | 8484635 | UNIFIED INSTALLATION FOR HETEROGENEOUS STORAGE SYSTEMS | EMC Corporation |
| 12981072 | 8479276 | MALWARE DETECTION USING RISK ANALYSIS BASED ON FILE SYSTEM AND NETWORK ACTIVITY | EMC Corporation |

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|---|---|---|---|
| 12981766 | 9009426 | METHODS, COMPUTER READABLE MEDIA, AND SYSTEMS FOR OPTIMIZING CACHE UTILIZATION | EMC Corporation |
| 12981772 | | [REDACTED] | EMC Corporation |
| 12981803 | | [REDACTED] | EMC Corporation |
| 12981978 | 8452900 | DYNAMIC COMPRESSION OF AN I/O DATA BLOCK | EMC Corporation |
| 12982139 | 8930738 | BATTERY BACK UP SYSTEM | EMC Corporation |
| 12982288 | | [REDACTED] | EMC Corporation |
| 12982378 | 9104863 | METHOD AND APPARATUS TO HARDEN A SOFTWARE EXECUTION IN RANDOM ACCESS MEMORY | EMC Corporation |
| 12982724 | 8818966 | CONTINUOUS FILE DEFRAGMENTATION DURING FILE OVER-WRITES | EMC Corporation |
| 12982993 | | [REDACTED] | EMC Corporation |
| 12983151 | 8713364 | UNIFIED RECOVERY | EMC Corporation |
| 12983165 | 8782007 | EFFICIENT DATA MOVEMENT | EMC Corporation |
| 12983172 | 8799393 | DYNAMIC DATA MOVEMENT | EMC Corporation |
| 12983213 | 8458418 | REPLICATION OF DEDUPLICATED DATA BETWEEN MULTI-CONTROLLER SYSTEMS | EMC Corporation |
| | | | |
| 12983246 | 8799915 | DECOMMISSIONING VIRTUAL APPLIANCES | EMC Corporation |
| 12983249 | 8601472 | INSTANTIATING VIRTUAL APPLIANCES | EMC Corporation |
| 12983281 | 9280550 | EFFICIENT STORAGE TIERING | EMC Corporation |
| 12983282 | | [REDACTED] | EMC Corporation |
| 12983285 | 8886901 | POLICY BASED STORAGE TIERING | EMC Corporation |
| 12989601 | 8589539 | MULTIPEER | EMC Corporation |
| 13/155306 | 9052830 | TECHNIQUES FOR AUTOMATED EVALUATION AND MOVEMENT OF DATA BETWEEN STORAGE TIERS FOR THIN DEVICES | EMC Corporation |
| 13/249957 | 8788817 | METHODS AND APPARATUS FOR SECURE AND RELIABLE TRANSMISSION OF MESSAGES OVER A SILENT ALARM CHANNEL | EMC Corporation |
| 13/323004 | 9047323 | SYSTEM AND METHOD FOR REVIEWING ROLE DEFINITIONS | EMC Corporation |
| 13/404737 | 9118661 | METHODS AND APPARATUS FOR AUTHENTICATING A USER USING MULTI-SERVER ONE-TIME PASSCODE VERIFICATION | EMC Corporation |
| 13/436884 | 9064210 | SEMANTICALLY-AWARE BEHAVIORAL SECURITY ANALYSIS SYSTEM FOR SECURITY INFORMATION AND EVENT MANAGEMENT | EMC Corporation |
| 13/472999 | 8925053 | INTERNET-ACCESSIBLE SERVICE FOR DYNAMIC AUTHENTICATION AND CONTINUOUS ASSERTION OF TRUST LEVEL IN IDENTITIES | EMC Corporation |
| 13/537506 | 9092782 | METHODS AND APPARATUS FOR RISK EVALUATION OF COMPROMISED CREDENTIALS | EMC Corporation |
| 13/537981 | 9160539 | METHODS AND APPARATUS FOR SECURE, STEALTHY AND RELIABLE TRANSMISSION OF ALERT MESSAGES FROM A SECURITY ALERTING SYSTEM | EMC Corporation |
| 13/538048 | 9081898 | AUTOMATIC CAPTURE OF MINIMAL PORTABLE EXECUTABLE BUG REPROS | EMC Corporation |
| 13/538102 | 8955069 | EVENT-BASED BIOMETRIC AUTHENTICATION USING MOBILE DEVICE | EMC Corporation |

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|---|---|---|---|
| 13/600676 | 9292671 | MULTI-SERVER AUTHENTICATION USING PERSONALIZED PROACTIVIZATION | EMC Corporation |
| 13/630242 | 9213727 | METHODS AND APPARATUS FOR OBTAINING DATABASE PERFORMANCE SNAPSHOTS | EMC Corporation |
| 13/708343 | 9323909 | SHARING A CRYPTOGRAPHIC DEVICE BY PARTITIONING CHALLENGE-RESPONSE SPACE | EMC Corporation |
| 13/713306 | 9154481 | DECRYPTION OF A PROTECTED RESOURCE ON A CRYPTOGRAPHIC DEVICE USING WIRELESS COMMUNICATION | EMC Corporation |
| 13/724752 | 9098803 | HYPOTHESES AGGREGATION IN DATA ANALYTICS | EMC Corporation |
| 13/725726 | 9270786 | SYSTEM AND METHOD FOR PROXYING TCP CONNECTIONS OVER A SCSI-BASED TRANSPORT | EMC Corporation |
| 13/725860 | 9232000 | METHOD AND SYSTEM FOR BALANCING LOAD ACROSS TARGET ENDPOINTS ON A SERVER AND INITIATOR ENDPOINTS ACCESSING THE SERVER | EMC Corporation |
| 13/728271 | 9083515 | FORWARD SECURE PSEUDORANDOM NUMBER GENERATION RESILIENT TO FORWARD CLOCK ATTACKS | EMC Corporation |
| 13/730017 | 9280469 | ACCELERATING SYNCHRONIZATION OF CERTAIN TYPES OF CACHED DATA | EMC Corporation |
| 13/730112 | 9110695 | REQUEST QUEUES FOR INTERACTIVE CLIENTS IN A SHARED FILE SYSTEM OF A PARALLEL COMPUTING SYSTEM | EMC Corporation |
| 13/730192 | 9164949 | SYSTEM AND METHOD FOR LUN AND CACHE MANAGEMENT | EMC Corporation |
| 13/730343 | 8954728 | GENERATION OF EXFILTRATION-RESILIENT CRYPTOGRAPHIC KEYS | EMC Corporation |
| 13/731443 | 8904482 | TECHNIQUES FOR SECURING A ONE-TIME PASSCODE WITH AN ALTERATION CODE | EMC Corporation |
| 13/758698 | 8984536 | HETEROGENEOUS DATA FROM MULTIPLE SOURCES | EMC Corporation |
| 13/795025 | 9049226 | DEFENDING AGAINST A CYBER ATTACK VIA ASSET OVERLAY MAPPING | EMC Corporation |
| 13/795619 | 9171171 | GENERATING A HEAT MAP TO IDENTIFY VULNERABLE DATA USERS WITHIN AN ORGANIZATION | EMC Corporation |
| 13/799725 | 9195670 | TRACKING WRITE OPERATIONS FOR INCREMENTAL BACKUPS OF DATA | EMC Corporation |
| 13/803377 | 9348519 | SYSTEM AND METHODS FOR OPTIMIZING MULTIPLE DATA STREAMS THROUGHPUT TO MAXIMIZE OVERALL THROUGHPUT OF A BACKUP APPLICATION | EMC Corporation |
| 13/804663 | 9143318 | USING A TOKEN CODE TO CONTROL ACCESS TO DATA AND APPLICATIONS IN A MOBILE PLATFORM | EMC Corporation |
| 13/804663 | 9154304 | USING A TOKEN CODE TO CONTROL ACCESS TO DATA AND APPLICATIONS IN A MOBILE PLATFORM | EMC Corporation |
| 13/826924 | 9225717 | EVENT-BASED DATA SIGNING VIA TIME-BASED ONE-TIME AUTHENTICATION PASSCODES | EMC Corporation |
| 13/837063 | 9317419 | SYSTEM AND METHOD FOR THIN PROVISIONING | EMC Corporation |

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|---|---|---|---|
| 13/837259 | 9270655 | CONFIGURABLE ONE-TIME AUTHENTICATION TOKENS WITH IMPROVED RESILIENCE TO ATTACKS | EMC Corporation |
| 13/910380 | 9342795 | ASSISTED LEARNING FOR DOCUMENT CLASSIFICATION | EMC Corporation |
| 13/927559 | 9356919 | AUTOMATED DISCOVERY OF KNOWLEDGE-BASED AUTHENTICATION COMPONENTS | EMC Corporation |
| 13/931151 | 9160726 | AUTHENTICATION SYSTEM WITH SELECTIVE AUTHENTICATION METHOD BASED ON RISK REASONING | EMC Corporation |
| 13/931167 | 9118487 | ASYMMETRIC ENCRYPTION SCHEME WITH EXPIRING REVOCABLE CERTIFICATES HAVING A PREDEFINED VALIDITY PERIOD | EMC Corporation |
| 13/931188 | 9288049 | CRYPTOGRAPHICALLY LINKING DATA AND AUTHENTICATION IDENTIFIERS WITHOUT EXPLICIT STORAGE OF LINKAGE | EMC Corporation |
| 13/931453 | 9317224 | QUANTIFYING UTILIZATION OF A DATA STORAGE SYSTEM BY A VIRTUAL STORAGE UNIT | EMC Corporation |
| 13/931830 | 9130985 | DATA DRIVEN DEVICE DETECTION | EMC Corporation |
| 13006195 | 8195905 | SYSTEMS AND METHODS OF QUOTA ACCOUNTING | EMC Corporation |
| 13007498 | 8200632 | SYSTEMS AND METHODS FOR ADAPTIVE COPY ON WRITE | EMC Corporation |
| 13009586 | 8117270 | METHOD AND APPARATUS FOR DEFINING MESSAGING IDENTITIES | EMC Corporation |
| 13013279 | 8819386 | MEMORY EFFICIENT USE OF DYNAMIC DATA STRUCTURES USED TO MANAGE SPARSELY ACCESSED DATA | EMC Corporation |
| 13014668 | 9021583 | SYSTEM AND METHOD FOR NETWORK SECURITY INCLUDING DETECTION OF MAN-IN-THE-BROWSER ATTACKS | EMC Corporation |
| | | | |
| 13017158 | 8549595 | COUNTING DISTINCT OCCURRENCES OF A FACT USING MOVING STATISTICS WINDOW | EMC Corporation |
| 13022946 | 8805951 | VIRTUAL MACHINES AND CLOUD STORAGE CACHING FOR CLOUD COMPUTING APPLICATIONS | EMC Corporation |
| 13025032 | 8266084 | SMART CONTAINERS | EMC Corporation |
| 13025967 | 8346926 | GRANTING ACCESS TO A CONTENT UNTI STORED ON AN OBJECT ADDRESSABLE STORAGE SYSTEM | EMC Corporation |
| 13030971 | 8069214 | METHOD AND APPARATUS FOR MANAGING MESSAGING IDENTITIES | EMC Corporation |
| 13035831 | 8380689 | SYSTEMS AND METHODS FOR PROVIDING NONLINEAR JOURNALING | EMC Corporation |
| 13036174 | 8479302 | ACCESS CONTROL VIA ORGANIZATION CHARTS | EMC Corporation |
| 13038280 | 8627479 | SYSTEM AND METHOD FOR NETWORK SECURITY INCLUDING DETECTION OF ATTACKS THROUGH PARTNER WEBSITES | EMC Corporation |
| 13042548 | 8458289 | METHODS AND APPARATUS FOR PROVIDING CONTENT | EMC Corporation |
| 13044774 | | [REDACTED] | EMC Corporation |
| 13050905 | 8352435 | CONTINUOUS DATA REDUCTION FOR HIGHLY AVAILABLE SYNCHRONOUS MIRRORS | EMC Corporation |
| 13051980 | | [REDACTED] | EMC Corporation |

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|---|---|---|---|
| 13051986 | | MEMORY QUOTA | EMC Corporation |
| 13051995 | 9104663 | DYNAMIC ALLOCATION OF MEMORY FOR MEMORY INTENSIVE OPERATORS | EMC Corporation |
| 13065014 | 8380956 | TECHNIQUES FOR STORING DATA TO DEVICE MIRRORS | EMC Corporation |
| 13065016 | 8713261 | CACHING TECHNIQUES | EMC Corporation |
| 13065549 | 8301812 | TECHNIQUES FOR PERFORMING HOST PATH DETECTION VERIFICATION | EMC Corporation |
| 13065631 | 8380757 | TECHNIQUES FOR PROVIDING A CONSOLIDATED SYSTEM CONFIGURATION VIEW USING DATABASE CHANGE TRACKING AND CONFIGURATION FILES | EMC Corporation |
| 13065735 | 8346788 | TECHNIQUES FOR MAPPING DATA MODELS USING AN INTERMEDIATE PROCESSING LAYER | EMC Corporation |
| 13065738 | 8914404 | TECHNIQUES FOR PERFORMING VIEW INDICATION MANAGEMENT | EMC Corporation |
| 13065748 | 8910031 | DIF-CRC BASED FAST HASHING | EMC Corporation |
| 13065806 | 8843714 | WRITE PACING SIMULATION TOOL | EMC Corporation |
| 13065849 | 8898402 | ASSIGNING STORAGE RESOURCES IN A VIRTUALIZATION ENVIRONMENT | EMC Corporation |
| 13065851 | 8751739 | DATA DEVICE SPARES | EMC Corporation |
| 13069492 | 8655823 | EVENT MANAGEMENT SYSTEM BASED ON MACHINE LOGIC | EMC Corporation |
| 13069593 | 9292523 | MANAGING DATA STORAGE | EMC Corporation |
| 13069952 | 8601175 | MANAGING ON-SITE ACCESS TO ECOSYSTEM FEATURES | EMC Corporation |
| 13070777 | 8499355 | AUTHORIZATION SYSTEM HAVING A BLOOM FILTERED AUTHENTICATION LIST FOR FRAUD DETECTION | EMC Corporation |
| 13070780 | 8498995 | OPTIMIZING DATA RETRIEVAL DURING EVENT DATA QUERY PROCESSING | EMC Corporation |
| | | | |
| 13071926 | | [REDACTED] | EMC Corporation |
| 13072458 | 8346728 | SNAPSHOT INDEXING | EMC Corporation |
| 13072463 | 9135122 | DATA MOVER DISCOVERY OF OBJECT EXTENT | EMC Corporation |
| 13073215 | 8996461 | METHOD AND APPARATUS FOR REPLICATING THE PUNCH COMMAND | EMC Corporation |
| 13073261 | 8601085 | TECHNIQUES FOR PREFERRED PATH DETERMINATION | EMC Corporation |
| 13073391 | | [REDACTED] | EMC Corporation |
| 13073868 | 8538933 | DEDUPLICATING RANGE OF DATA BLOCKS | EMC Corporation |
| 13074164 | | [REDACTED] | EMC Corporation |
| | | | |
| | | | |
| 13074250 | 9069930 | SECURITY INFORMATION AND EVENT MANAGEMENT SYSTEM EMPLOYING SECURITY BUSINESS OBJECTS AND WORKFLOWS | EMC Corporation |
| 13075073 | 8924355 | CHECKPOINT RESTART | EMC Corporation |
| 13075487 | 8977812 | ITERATING IN PARALLEL FOR DEDUPLICATION | EMC Corporation |
| 13075502 | 9390093 | MANAGING DATA OBJECTS | EMC Corporation |
| 13075602 | | [REDACTED] | EMC Corporation |
| 13075628 | 8572407 | GPU ASSIST FOR STORAGE SYSTEMS | EMC Corporation |

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|---|---|---|---|
| 13075639 | 9043793 | VERIFICATION OF CONTROLS IN INFORMATION TECHNOLOGY INFRASTRUCTURE VIA OBLIGATION ASSERTION | EMC Corporation |
| 13075661 | 8442952 | RECOVERING IN DEDUPLICATION SYSTEMS | EMC Corporation |
| 13075707 | | [REDACTED] | EMC Corporation |
| 13075756 | 8566595 | MANAGING SECURE COMMUNICATIONS WITH SOFTWARE ENVIRONMENTS | EMC Corporation |
| 13075848 | 8346742 | REMOTE VERIFICATION OF FILE PROTECTIONS OF CLOUD DATA STORAGE | EMC Corporation |
| 13076010 | 8826041 | IN-BAND DETECTION MECHANISM FOR DETECTING INTERMEDIATE LAYER IN A STORAGE I/O DRIVER STACK | EMC Corporation |
| 13076056 | 8190784 | IN-BAND TRANSPORT MECHANISM FOR CARRYING COMMUNICATIONS AMONG FUNCTIONAL COMPONENTS OF A STORAGE I/O INTERFACT STACK | EMC Corporation |
| 13076490 | | [REDACTED] | EMC Corporation |
| 13076534 | 8792862 | PROVIDING ENHANCED SECURITY FOR WIRELESS TELECOMMUNICATIONS DEVICES | EMC Corporation |
| 13076594 | | [REDACTED] | EMC Corporation |
| 13076619 | 8656455 | MANAGING DATA LOSS PREVENTION POLICIES | EMC Corporation |
| 13076747 | | [REDACTED] | EMC Corporation |
| 13076869 | 8832812 | METHODS AND APPARATUS FOR AUTHENTICATING A USER MULTIPLE TIMES DURING A SESSION | EMC Corporation |
| 13076911 | | [REDACTED] | EMC Corporation |
| 13076925 | | [REDACTED] | EMC Corporation |
| 13077076 | 8875244 | METHODS AND APPARATUS FOR AUTHENTICATING A USER USING DYNAMIC CLIENT-SIDE STORAGE VALUES | EMC Corporation |
| 13077103 | 8782174 | UPLOADING AND DOWNLOADING UNSECURED FILES VIA A VIRTUAL MACHINE ENVIRONMENT | EMC Corporation |
| 13077153 | 8621649 | PROVIDING A SECURITY-SENSITIVE ENVIRONMENT | EMC Corporation |
| 13077175 | 9354769 | ELECTRONICALLY CONTROLLING COMMITMENT OF A CHANGE TO STORED | EMC Corporation |
| 13077213 | 8924966 | CAPTURE/REVERT MODULE FOR COMPLEX ASSETS OF DISTRIBUTED INFORMATION TECHNOLOGY INFRASTRUCTURE | EMC Corporation |
| 13077230 | 8694993 | VIRTUALIZATION PLATFORM FOR SECURED COMMUNICATIONS BETWEEN A USER DEVICE AND AN APPLICATION SERVER | EMC Corporation |
| 13077246 | 8429362 | JOURNAL BASED REPLICATION WITH A VIRTUAL SERVICE LAYER | EMC Corporation |
| 13077256 | | [REDACTED] | EMC Corporation |
| 13077262 | | [REDACTED] | EMC Corporation |
| 13077266 | 9063994 | NETWORKED BASED REPLICATION OF DISTRIBUTED VOLUMES | EMC Corporation |
| 13077271 | 8726066 | JOURNAL BASED REPLICATION WITH ENHANCE FAILOVER | EMC Corporation |
| 13077280 | | [REDACTED] | EMC Corporation |
| 13077376 | 8468241 | ADAPTIVE OPTIMIZATION ACROSSINFORMATION TECHNOLOGY INFRASTRUCTURE | EMC Corporation |

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|---|---|---|---|
| 13077429 | 8868845 | DYNAMIC SINGLE/MULTI-READER, SINGLE-WRITER SPINLOCKS | EMC Corporation |
| 13077553 | 9323671 | MANAGING ENHANCED WRITE CACHING | EMC Corporation |
| 13077615 | 8775775 | DYNAMIC PREFETCH THROTTLING FOR MULTI-CONTROLLER SYSTEMS | EMC Corporation |
| 13077679 | 8713282 | LARGE SCALE DATA STORAGE SYSTEM WITH FAULT TOLERANCE | EMC Corporation |
| 13077726 | 9026499 | SYSTEM AND METHOD FOR RECOVERING FILE SYSTEMS BY RESTORING PARTITIONS | EMC Corporation |
| 13077743 | | [REDACTED] | EMC Corporation |
| 13077764 | | [REDACTED] | EMC Corporation |
| 13077775 | | TIME-BASED DATA PARTITIONING | EMC Corporation |
| 13077779 | | RESOURCE EFFICIENT SCALE-OUT FILE SYSTEMS | EMC Corporation |
| 13077780 | | [REDACTED] | EMC Corporation |
| 13077781 | | [REDACTED] | EMC Corporation |
| 13077784 | | SYSTEM AND METHOD FOR VERIFYING CONSISTENT POINTS IN FILE SYSTEMS | EMC Corporation |
| 13077790 | | SYSTEM AND METHOD FOR MAINTAINING CONSISTENT POINTS IN FILE SYSTEMS USING A PRIME DEPENDENCY LIST | EMC Corporation |
| 13077795 | 8832394 | SYSTEM AND METHOD FOR MAINTAINING CONSISTENT POINTS IN FILE SYSTEMS | EMC Corporation |
| 13077820 | 8595416 | WEAR-LEVELING SYSTEM AND METHOD | EMC Corporation |
| 13077837 | 8938569 | BMC-BASED COMMUNICATION SYSTEM | EMC Corporation |
| 13077844 | 8725923 | BMC-BASED COMMUNICATION SYSTEM | EMC Corporation |
| 13077860 | | [REDACTED] | EMC Corporation |
| 13077863 | 8732342 | I/O SCHEDULING SYSTEM AND METHOD | EMC Corporation |
| 13077873 | 8639861 | PSEUDO WRITING SYSTEM AND METHOD | EMC Corporation |
| 13077935 | 8818954 | CHANGE TRACKING | EMC Corporation |
| 13077939 | 8938429 | RESYNCHRONIZATION OF NONACTIVE AND ACTIVE SEGMENTS | EMC Corporation |
| 13077942 | | [REDACTED] | EMC Corporation |
| 13077961 | 9323581 | SPACE INHERITANCE | EMC Corporation |
| 13077965 | 8667140 | DISTINGUISHING TENANTS IN A MULTI-TENANT CLOUD ENVIRONMENT | EMC Corporation |
| 13079121 | 8140484 | TECHNIQUES FOR DETERMINING AN IMPLEMENTED DATA PROTECTION POLICY | EMC Corporation |
| 13079409 | 8140728 | DATA PACKET ARBITRATION SYSTEM | EMC Corporation |
| 13081009 | 8775356 | QUERY ENHANCEMENT OF SEMANTIC WIKI FOR IMPROVED SEARCHING OF UNSTRUCTURED DATA | EMC Corporation |
| 13085377 | 8825720 | SCALING ASYNCHRONOUS RECLAMATION OF FREE SPACE IN DE-DUPLICATED MULTI-CONTROLLER STORAGE SYSTEMS | EMC Corporation |
| 13086332 | 8145863 | EFFICIENT DATA STORAGE USING TWO LEVEL DELTA RESEMBLANCE | EMC Corporation |
| 13090166 | 8312006 | CLUSTER STORAGE USING DELTA COMPRESSION | EMC Corporation |
| | | | |
| 13096397 | 8705538 | METHODS AND SYSTEMS FOR DYNAMIC DIVISION OF PATH CAPACITY | EMC Corporation |
| 13100361 | 8397001 | TECHNIQUES FOR DATA STORAGE CONFIGURATION | EMC Corporation |

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|---|---|---|---|
| 13101959 | 8756684 | SYSTEM AND METHOD FOR NETWORK SECURITY INCLUDING DETECTION OF ATTACKS THROUGH PARTNER WEBSITES | EMC Corporation |
| 13103644 | 8290947 | FEDERATED SEARCH | EMC Corporation |
| 13105500 | 8868980 | MONITORING CIRCUIT | EMC Corporation |
| 13105544 | 8536454 | HOUSING SYSTEM FOR RECEPTACLES | EMC Corporation |
| 13107769 | 8745003 | SYNCHRONIZATION OF STORAGE USING COMPARISONS OF FINGERPRINTS OF BLOCKS | EMC Corporation |
| 13107791 | 8782003 | SYNCHRONIZATION OF STORAGE USING LOG FILES AND SNAPSHOTS | EMC Corporation |
| 13111285 | 8296340 | MANAGING FILE OBJECTS IN A DATA STORAGE SYSTEM | EMC Corporation |
| 13116913 | 8554809 | CALCULATING QUOTA USAGE WITHOUT IMPACTING FILE SYSTEM SERVICES | EMC Corporation |
| 13134728 | 8819374 | TECHNIQUES FOR PERFORMING DATA MIGRATION | EMC Corporation |
| 13134875 | 9009437 | TECHNIQUES FOR SHARED DATA STORAGE PROVISIONING WITH THIN DEVICES | EMC Corporation |
| 13135080 | 9223822 | TECHNIQUES FOR PERFORMING INDICATION MANAGEMENT | EMC Corporation |
| 13135156 | | [REDACTED] | EMC Corporation |
| 13135261 | | [REDACTED] | EMC Corporation |
| 13135265 | 9323655 | LOCATION OF DATA AMONG STORAGE TIERS | EMC Corporation |
| 13135266 | 9137336 | DATA COMPRESSION TECHNIQUES | EMC Corporation |
| 13135311 | 8601209 | MAINTAINING DASD AND TAPE CONTINUOUS AVAILABILITY | EMC Corporation |
| 13135315 | 8593918 | MAINTAINING TAPE EMULATION CONSISTENCY | EMC Corporation |
| 13136342 | 8726083 | SYNCHRONIZED TAKING OF SNAPSHOT MEMORY IMAGES OF VIRTUAL MACHINES AND STORAGE SNAPSHOTS | EMC Corporation |
| 13136359 | 8667490 | ACTIVE/ACTIVE STORAGE AND VIRTUAL MACHINE MOBILITY OVER ASYNCHRONOUS DISTANCES | EMC Corporation |
| 13136367 | 8689054 | INCREASED DISTANCE OF VIRTUAL MACHINE MOBILITY OVER ASYNCHRONOUS DISTANCES | EMC Corporation |
| 13136379 | 8726067 | UTILIZING BOTH APPLICATION AND STORAGE NETWORKS FOR DISTRIBUTED STORAGE OVER ASYNCHRONOUS DISTANCES | EMC Corporation |
| 13146342 | 8725789 | METHOD AND APPARATUS FOR PROCESSING DISTRIBUTED DATA | EMC Corporation |
| 13152110 | 8234413 | PARTITIONING A DATA STREAM USING EMBEDDED ANCHORS | EMC Corporation |
| 13155273 | 8200721 | SYSTEM AND METHOD FOR PROVIDING WRITE-ONCE-READ-MANY (WORM) STORAGE | EMC Corporation |
| 13155648 | 9075991 | LOOTING DETECTION AND REMEDIATION | EMC Corporation |
| 13155734 | | [REDACTED] | EMC Corporation |
| | | | |
| 13158498 | 9383928 | REPLICATION TECHNIQUES WITH CONTENT ADDRESSABLE STORAGE | EMC Corporation |
| 13159780 | | [REDACTED] | EMC Corporation |
| | | | |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13161587 | 9229638 | ADAPTIVE FLOW CONTROL FOR NETWORKED STORAGE | EMC Corporation |
| 13161666 | 8903828 | METHOD AND SYSTEM FOR CONFIGURING A MULTI-PATH INDEX | EMC Corporation |
| 13161683 | | [REDACTED] | EMC Corporation |
| | | | |
| | | | |
| 13163019 | | [REDACTED] | EMC Corporation |
| 13166096 | 8856589 | FAILURE PROTECTION IN AN ENVIRONMENT INCLUDING VIRTUALIZATION OF NETWORKED STORAGE RESOURCES | EMC Corporation |
| 13166128 | 8972361 | PROVIDING SYSTEM MANAGEMENT SERVICES | EMC Corporation |
| 13168163 | 8850208 | CERTIFICATE CROSSCHECKING BY MULTIPLE CERTIFICATE AUTHORITIES | EMC Corporation |
| 13168182 | 8521691 | SEAMLESS MIGRATION BETWEEN REPLICATION TECHNOLOGIES | EMC Corporation |
| 13168299 | 8521694 | LEVERAGING ARRAY SNAPSHOTS FOR IMMEDIATE CONTINUOUS DATA PROTECTION | EMC Corporation |
| 13168329 | 8745327 | METHODS, SYSTEMS, AND COMPUTER READABLE MEDIUM FOR CONTROLLING PRIORITIZATION OF TIERING AND SPIN DOWN FEATURES IN A DATA STORAGE SYSTEM | EMC Corporation |
| 13168391 | 8805786 | REPLICATING SELECTED SNAPSHOTS FROM ONE STORAGE ARRAY TO ANOTHER, WITH MINIMAL DATA TRANSMISSION | EMC Corporation |
| 13168479 | 8745004 | REVERTING AN OLD SNAPSHOT ON A PRODUCTION VOLUME WITHOUT A FULL SWEEP | EMC Corporation |
| 13168593 | 8762662 | METHOD AND APPARATUS FOR APPLICATION MIGRATION VALIDATION | EMC Corporation |
| 13169167 | 8752172 | PROCESSING EMAIL MESSAGES BASED ON AUTHENTICITY ANALYSIS | EMC Corporation |
| 13169179 | 8856531 | MESSAGE BUS KEY AGREEMENT SCHEME | EMC Corporation |
| 13169272 | 8719522 | VIRTUAL DESKTOP BACKUP AND RESTORE | EMC Corporation |
| 13169668 | | [REDACTED] | EMC Corporation |
| 13169679 | 8805796 | DEDUPLICATING RANGE OF DATA BLOCKS | EMC Corporation |
| 13170242 | 8924726 | ROBUST MESSAGE ENCRYPTION | EMC Corporation |
| 13170345 | 9235971 | SERVICE WINDOW OPTIMIZED SYSTEM ALERT ENGINE | EMC Corporation |
| 13170732 | | [REDACTED] | EMC Corporation |
| 13171100 | | [REDACTED] | EMC Corporation |
| 13171759 | 8813234 | GRAPH-BASED APPROACH TO DETERRING PERSISTENT SECURITY THREATS | EMC Corporation |
| 13171869 | 9020987 | MANAGING UPDATING OF METADATA OF FILE SYSTEMS | EMC Corporation |
| 13172074 | 9239908 | MANAGING ORGANIZATION BASED SECURITY RISKS | EMC Corporation |
| 13172106 | 9298493 | MANAGING SYSTEM I/O LOAD | EMC Corporation |
| 13172144 | 8447873 | MANAGING OBJECT MODEL COMMUNICATIONS | EMC Corporation |
| 13172157 | 8601108 | CREDENTIAL AUTHENTICATION AND AUTHORIZATION IN A SERVER DEVICE | EMC Corporation |
| 13172172 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13172517 | 8645654 | SELECTING PHYSICAL STORAGE IN DATA STORAGE SYSTEMS | EMC Corporation |
| 13172610 | 9026737 | ENHANCING MEMORY BUFFERING BY USING SECONDARY STORAGE | EMC Corporation |
| 13172687 | 8484356 | SYSTEM AND METHOD FOR ALLOCATING A STORAGE UNIT FOR BACKUP IN A STORAGE SYSTEM WITH LOAD BALANCING | EMC Corporation |
| 13172692 | | [REDACTED] | EMC Corporation |
| 13172979 | 8904531 | DETECTING ADVANCED PERSISTENT THREATS | EMC Corporation |
| 13172999 | 9282114 | GENERATION OF ALERTS IN AN EVENT MANAGEMENT SYSTEM BASED UPON RISK | EMC Corporation |
| 13173056 | 9037548 | DYNAMICALLY UPDATED DATA MANAGEMENT PROCESSING PLANS GENERATED OUTSIDE A STORAGE ARRAY | EMC Corporation |
| 13173410 | | [REDACTED] | EMC Corporation |
| 13173422 | | [REDACTED] | EMC Corporation |
| 13173455 | | [REDACTED] | EMC Corporation |
| 13173524 | 8832030 | SHAREPOINT GRANULAR LEVEL RECOVERIES | EMC Corporation |
| 13173553 | 8843450 | WRITE CAPABLE EXCHANGE GRANULAR LEVEL RECOVERIES | EMC Corporation |
| 13173607 | 8650405 | AUTHENTICATION USING DYNAMIC, CLIENT INFORMATION BASED PIN | EMC Corporation |
| 13173622 | 8938425 | MANAGING LOGICAL VIEWS OF STORAGE | EMC Corporation |
| 13173726 | 8601588 | METHOD AND SYSTEM FOR DETECTION OF CLONE AUTHENTICATOR | EMC Corporation |
| 13173741 | 8843781 | MANAGING DRIVE ERROR INFORMATION IN DATA STORAGE SYSTEMS | EMC Corporation |
| 13173874 | 8621237 | PROTECTING AGAINST CRYPTOGRAPHIC KEY EXPOSURE IN SOURCE CODE | EMC Corporation |
| 13173877 | 8505097 | REFRESH-AND-ROTATION PROCESS FOR MINIMIZING RESOURCE VULNERABILITY TO PERSISTENT SECURITY THREATS | EMC Corporation |
| 13174047 | | [REDACTED] | EMC Corporation |
| | | | |
| 13174263 | | [REDACTED] | EMC Corporation |
| 13174305 | | [REDACTED] | EMC Corporation |
| 13174326 | | [REDACTED] | EMC Corporation |
| 13174341 | 9015432 | ESTABLISHING A MAPPING TO A VIRTUAL DISK | EMC Corporation |
| | | | |
| 13174384 | 9003138 | READ SIGNATURE COMMAND | EMC Corporation |
| 13174402 | 8862546 | VIRTUAL ACCESS ROLL | EMC Corporation |
| 13174427 | | [REDACTED] | EMC Corporation |
| 13174444 | 8380885 | HANDLING ABORT COMMANDS IN REPLICATION | EMC Corporation |
| 13174452 | 8706701 | SCALABLE CLOUD FILE SYSTEM WITH EFFICIENT INTEGRITY CHECKS | EMC Corporation |
| 13174499 | 8595198 | COMPRESSION FORECASTING FOR A DEDUPLICATING STORAGE SYSTEM | EMC Corporation |
| 13174504 | 8751463 | CAPACITY FORECASTING FOR A DEDUPLICATING STORAGE SYSTEM | EMC Corporation |
| 13174639 | 8626991 | MULTI-LUN SSD OPTIMIZATION SYSTEM AND METHOD | EMC Corporation |
| 13174666 | 8843443 | EFFICIENT BACKUP OF VIRTUAL DATA | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13174675 | 8671075 | CHANGE TRACKING INDICES IN VIRTUAL MACHINES | EMC Corporation |
| 13174677 | 8849769 | VIRTUAL MACHINE FILE LEVEL RECOVERY | EMC Corporation |
| 13174681 | 8949829 | VIRTUAL MACHINE DISASTER RECOVERY | EMC Corporation |
| | | | |
| 13174740 | 8819077 | DYNAMIC DATA STRUCTURES | EMC Corporation |
| | | | |
| 13174751 | 8719305 | OBJECT TYPE DEFINITIONS | EMC Corporation |
| 13177968 | | [REDACTED] | EMC Corporation |
| 13179164 | 8694554 | CLUSTER STORAGE USING SUBSEGMENTING | EMC Corporation |
| 13180341 | 8800884 | METHOD FOR CONTROLLING COOLING IN A DATA STORAGE SYSTEM | EMC Corporation |
| 13181060 | 9106460 | RUNNING DISPARITY COMPUTATION PREDICTOR | EMC Corporation |
| 13181277 | 8707080 | SIMPLE CIRCULAR ASYNCHRONOUS CLOCK DOMAIN CROSSING TECHNIQUE FOR DIGITAL DATA | EMC Corporation |
| 13182669 | | SYSTEM AND METHOD FOR DATA DEDUPLICATION FOR DISK STORAGE SUBSYSTEMS | EMC Corporation |
| 13184430 | | SYSTEM AND METHOD FOR AUTOMATIC DETECTION OF ANOMALOUS RECURRENT BEHAVIOR | EMC Corporation |
| | | | |
| 13192352 | 8271456 | EFFICIENT BACKUP DATA RETRIEVAL | EMC Corporation |
| 13192947 | 8751878 | AUTOMATIC FAILOVER DURING ONLINE DATA MIGRATION | EMC Corporation |
| 13198812 | 8452773 | MAPPING TERMS BETWEEN MULTIPLE TAXONOMIES | EMC Corporation |
| 13200139 | 8868593 | USER INTERFACE CONTENT VIEW SEARCHING | EMC Corporation |
| 13200288 | 8621178 | TECHNIQUES FOR DATA STORAGE ARRAY VIRTUALIZATION | EMC Corporation |
| 13200569 | 8825964 | ADAPTIVE INTEGRATION OF CLOUD DATA SERVICES WITH A DATA STORAGE SYSTEM | EMC Corporation |
| 13200658 | 8880801 | TECHNIQUES FOR RELIABILITY AND AVAILABILITY ASSESSMENT OF DATA STORAGE CONFIGURATIONS | EMC Corporation |
| 13200662 | 8601025 | TECHNIQUES USING A BIDIRECTIONAL GRAPH FOR REPORTING TO CLIENTS | EMC Corporation |
| 13200675 | 8418192 | TECHNIQUES USING AN API FOR ASPECT WEAVING | EMC Corporation |
| 13200777 | | [REDACTED] | EMC Corporation |
| 13206211 | 8375451 | SECURITY FOR SCANNING OBJECTS | EMC Corporation |
| 13209533 | 8176276 | TECHNIQUES FOR PRODUCING A CONSISTENT COPY OF SOURCE DATA AT A TARGET LOCATION | EMC Corporation |
| 13211047 | 8800023 | REMOTE ACCESS ARCHITECTURE ENABLING A CLIENT TO PERFORM AN OPERATION | EMC Corporation |
| 13213196 | | [REDACTED] | EMC Corporation |
| 13214019 | 8554918 | DATA MIGRATION WITH LOAD BALANCING AND OPTIMIZATION | EMC Corporation |
| 13214988 | 8234475 | SAVE SET BUNDLING FOR STAGING | EMC Corporation |
| 13216013 | 8756249 | METHOD AND APPARATUS FOR EFFICIENTLY SEARCHING DATA IN A STORAGE SYSTEM | EMC Corporation |

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|---|---|---|---|
| 13216020 | 8825626 | METHOD AND SYSTEM FOR DETECTING UNWANTED CONTENT OF FILES | EMC Corporation |
| 13216025 | 8195614 | INCREMENTAL GARBAGE COLLECTION OF DATA IN SECONDARY STORAGE | EMC Corporation |
| 13216066 | 8560525 | QUERY TRANSLATION FOR SEARCHING COMPLEX STRUCTURES OF OBJECTS | EMC Corporation |
| 13216558 | 8176277 | REPLICATION OF DEDUPLICATED STORAGE SYSTEM | EMC Corporation |
| 13217400 | 8656100 | SYSTEM AND METHOD FOR MANAGING PROVISIONING OF STORAGE RESOURCES IN A NETWORK WITH VIRTUALIZATION OF RESOURCES IN SUCH A NETWORK | EMC Corporation |
| 13220775 | 8689355 | SECURE RECOVERY OF CREDENTIALS | EMC Corporation |
| 13222036 | 8244777 | MODEL DRIVEN COMPLIANCE MANAGEMENT SYSTEM AND METHOD | EMC Corporation |
| 13222057 | 8570903 | SYSTEM AND METHOD FOR MANAGING A VIRTUAL DOMAIN ENVIRONMENT TO ENABLE ROOT CAUSE AND IMPACT ANALYSIS | EMC Corporation |
| 13222321 | 8924665 | VIRTUAL ORDERED WRITES TRANSFER LOG | EMC Corporation |
| 13225224 | 8412688 | DELEGATED REFERENCE COUNT BASE FILE VERSIONING | EMC Corporation |
| 13225356 | 8713356 | ERROR DETECTION AND RECOVERY TOOL FOR LOGICAL VOLUME MANAGEMENT IN A DATA STORAGE SYSTEM | EMC Corporation |
| 13225912 | 8694724 | MANAGING DATA STORAGE BY PROVISIONING CACHE AS A VIRTUAL DEVICE | EMC Corporation |
| 13226546 | 8898112 | WRITE SIGNATURE COMMAND | EMC Corporation |
| 13226878 | 8564453 | INDICATING ERRORS IN CONNECTION WITH DEVICES | EMC Corporation |
| 13231695 | 8706679 | COOPERATIVE LOCKING BETWEEN MULTIPLE INDEPENDENT OWNERS OF DATA SPACE | EMC Corporation |
| 13233920 | 8972352 | PROBE BASED BACKUP | EMC Corporation |
| 13234435 | | [REDACTED] | EMC Corporation |
| 13238426 | 8719497 | USING DEVICE SPOOFING TO IMPROVE RECOVERY TIME IN A CONTINUOUS DATA PROTECTION ENVIRONMENT | EMC Corporation |
| 13238646 | 8782633 | UPGRADING FIRMWARE TO A POWER SUPPLY | EMC Corporation |
| 13239863 | 8683568 | USING PACKET INTERCEPTION TO INTEGRATE RISK-BASED USER AUTHENTICATION INTO ONLINE SERVICES | EMC Corporation |
| 13240006 | | [REDACTED] | EMC Corporation |
| 13240869 | 8689048 | NON-LOGGING RESUMABLE DISTRIBUTED CLUSTER UPGRADE | EMC Corporation |
| 13240923 | 8862606 | EXECUTING CORRELATED AND MULTI-ROW SUBQUERIES IN A MPP DATABASE | EMC Corporation |
| | | | |
| 13245926 | 8904524 | DETECTION OF FAST FLUX NETWORKS | EMC Corporation |
| 13245962 | | [REDACTED] | EMC Corporation |
| 13245966 | 9122546 | RAPID PROCESSING OF EVENT NOTIFICATIONS | EMC Corporation |
| 13246023 | 8701174 | CONTROLLING ACCESS TO A PROTECTED RESOURCE USING VIRTUAL DESKTOP AND ONGOING AUTHENTICATION | EMC Corporation |

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|---|---|---|---|
| 13246025 | 8548459 | REPLACING FIELD HARDWARD INVOLVING UTILIZATION OF A SMART PHONE | EMC Corporation |
| 13246126 | | [REDACTED] | EMC Corporation |
| 13246374 | | [REDACTED] | EMC Corporation |
| 13246457 | 8677472 | MULTI-POINT COLLECTION OF BEHAVIORAL DATA RELATING TO A VIRTUALIZED BROWSING SESSION WITH A SECURE SERVER | EMC Corporation |
| 13246535 | 8331546 | ENHANCED SERVICES PROVIDED USING COMMUNICATION REDIRECTION AND PROCESSING | EMC Corporation |
| 13246937 | 8621586 | USING BASELINE PROFILES IN ADAPTIVE AUTHENTICATION | EMC Corporation |
| 13247034 | 8645681 | TECHNIQUES FOR DISTRIBUTING SECURE COMMUNICATION SECRETS | EMC Corporation |
| 13247167 | 9239916 | USING SPATIAL DIVERSITY WITH SECRETS | EMC Corporation |
| 13247181 | | [REDACTED] | EMC Corporation |
| 13247205 | | [REDACTED] | EMC Corporation |
| 13247364 | 8495251 | HARDWARE METHOD FOR DETECTING TIMEOUT CONDITIONS IN A LARGE NUMBER OF DATA CONNECTIONS | EMC Corporation |
| 13247505 | | [REDACTED] | EMC Corporation |
| 13247623 | | [REDACTED] | EMC Corporation |
| 13247753 | 9213717 | MANAGING CONCURRENT I/OS IN FILE SYSTEMS | EMC Corporation |
| 13247859 | 8661062 | MANAGING ANALYSIS OF ACTIVITY DATA | EMC Corporation |
| 13248068 | 8812899 | MANAGING READ CACHING | EMC Corporation |
| 13248127 | | [REDACTED] | EMC Corporation |
| 13248178 | 9256381 | MANAGING DEGRADED STORAGE ELEMENTS IN DATA STORAGE SYSTEMS | EMC Corporation |
| 13248219 | 9298636 | MANAGING DATA STORAGE | EMC Corporation |
| 13248223 | 9128943 | METHOD AND SYSTEM FOR TRACKING RE-SIZING AND RE-CREATION OF VOLUMES CREATED FOR MAKING INCREMENTAL BACKUPS | EMC Corporation |
| 13248306 | 8949526 | RESERVING STORAGE SPACE IN DATA STORAGE SYSTEMS | EMC Corporation |
| | | | |
| 13248389 | 9135116 | CLOUD ENABLED FILESYSTEMS | EMC Corporation |
| | | | |
| 13248408 | | [REDACTED] | EMC Corporation |
| 13248477 | 8918621 | BLOCK ADDRESS ISOLATION FOR FILE SYSTEMS | EMC Corporation |
| 13248572 | 8739290 | GENERATING ALERTS IN EVENT MANAGEMENT SYSTEMS | EMC Corporation |
| 13248573 | | [REDACTED] | EMC Corporation |
| 13248589 | 9104500 | LOCK-FREE JOB SCHEDULER FOR MULTI-PROCESSOR SYSTEMS | EMC Corporation |
| 13248752 | | [REDACTED] | EMC Corporation |
| 13248918 | 8914595 | SNAPSHOTS IN DEDUPLICATION | EMC Corporation |
| 13248926 | 8543609 | SNAPSHOTS IN DEDUPLICATION | EMC Corporation |
| 13248939 | 8935498 | SPLITTER BASED HOT MIGRATION | EMC Corporation |
| 13248978 | 8806161 | MIRRORING SPLITTER META DATA | EMC Corporation |
| 13249008 | 8661068 | MANAGING GLOBAL METADATA CACHES IN DATA STORAGE SYSTEMS | EMC Corporation |

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|---|---|---|---|
| 13249170 | 8886995 | FAULT TOLERANT STATE MACHINE FOR CONFIGURING SOFTWARE IN A DIGITAL COMPUTER | EMC Corporation |
| 13249300 | 9037793 | MANAGING DATA STORAGE | EMC Corporation |
| 13249302 | 9081594 | MANAGING DATA STORAGE SYSTEMS IN VIRTUAL SYSTEMS BASED ON STORAGE AWARENESS | EMC Corporation |
| 13249323 | 8959287 | MANAGING CACHES FOR REPORTING STORAGE SYSTEM INFORMATION | EMC Corporation |
| 13249330 | 9361320 | MODELING BIG DATA | EMC Corporation |
| 13249335 | 9031992 | ANALYZING BIG DATA | EMC Corporation |
| 13249343 | 8886751 | METHODS AND APPARATUS FOR A DATA DRIVEN SYSTEM IMPLEMENTATION USING MODEL COMPONENTS | EMC Corporation |
| 13249365 | 8813026 | METHODS AND APPARATUS FOR STORING INFORMATION FOR COMPONENTS OF A SYSTEM IN MODEL COMPONENT FILES TO PROVIDE A WORLD VIEW OF THE SYSTEM | EMC Corporation |
| 13249370 | 9275063 | REPLICATION OPTIMIZATED IO | EMC Corporation |
| 13249372 | | [REDACTED] | EMC Corporation |
| 13249422 | 9075642 | CONTROLLING ACCESS TO RESOURCES USING INDEPENDENT AND NESTED HYPERVISORS IN A STORAGE SYSTEM ENVIRONMENT | EMC Corporation |
| 13249424 | | [REDACTED] | EMC Corporation |
| 13249453 | 9003019 | METHODS AND SYSTEMS FOR UTILIZATION TRACKING AND NOTIFICATION OF CLOUD RESOURCES | EMC Corporation |
| 13249481 | 8726337 | COMPUTING WITH PRESENTATION LAYER FOR MULTIPLE VIRTUAL MACHINES | EMC Corporation |
| 13249484 | 8683548 | COMPUTING WITH POLICY ENGINE FOR MULTIPLE VIRTUAL MACHINES | EMC Corporation |
| 13249506 | 8898351 | DYNAMIC COMPRESSION OF AN I/O DATA BLOCK | EMC Corporation |
| 13249559 | 9367452 | SYSTEM AND METHOD FOR APPORTIONING STORAGE | EMC Corporation |
| 13249585 | 9367453 | SYSTEM AND METHOD FOR MIGRATING CACHE DATA | EMC Corporation |
| 13249634 | | [REDACTED] | EMC Corporation |
| 13249980 | 8627421 | METHODS AND APPARATUS FOR AUTHENTICATING A USER BASED ON IMPLICIT USER MEMORY | EMC Corporation |
| 13250225 | 8699713 | KEY UPDATE WITH COMPROMISE DETECTION | EMC Corporation |
| 13250256 | | [REDACTED] | EMC Corporation |
| 13250303 | 8990162 | METADATA GENERATION FOR INCREMENTAL BACKUP | EMC Corporation |
| 13250310 | 8725869 | CLASSIFYING SITUATIONS FOR SYSTEM MANAGEMENT | EMC Corporation |
| 13250314 | 8984220 | STORAGE PATH MANAGEMENT HOST VIEW | EMC Corporation |
| 13250327 | 8713359 | AUTONOMOUS PRIMARY-MIRROR SYNCHRONIZED RESET | EMC Corporation |
| 13250507 | 8732282 | MODEL FRAMEWORK TO FACILITATE ROBUST PROGRAMMING OF DISTRIBUTED WORKFLOWS | EMC Corporation |
| 13250512 | 8520533 | STORAGE PATH MANAGEMENT BUS VIEW | EMC Corporation |
| 13250557 | 8849878 | EFFICIENT DATA REHYDRATION | EMC Corporation |

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|---|---|---|---|
| 13250583 | 8751698 | STORAGE PATH MANAGEMENT HOST AGENT | EMC Corporation |
| 13250593 | 8898407 | INCREMENTAL BLOCK BASED BACKUP | EMC Corporation |
| 13250620 | 8769224 | DISCOVERING NEW PHYSICAL MACHINES FOR PHYSICAL TO VIRTUAL CONVERSION | EMC Corporation |
| 13250637 | 8738870 | BLOCK BASED BACKUP | EMC Corporation |
| 13250670 | 8949208 | SYSTEM AND METHOD FOR BULK DATA MOVEMENT BETWEEN STORAGE TIERS | EMC Corporation |
| 13250678 | | [REDACTED] | EMC Corporation |
| 13250684 | 8943032 | SYSTEM AND METHOD FOR DATA MIGRATION USING HYBRID MODES | EMC Corporation |
| 13250692 | | [REDACTED] | EMC Corporation |
| 13250732 | 9026496 | EFFICIENT BUILDING OF RESTORE LIST | EMC Corporation |
| 13250769 | 8730678 | CABLE MANAGMENT APPARATUS | EMC Corporation |
| | | | |
| 13251151 | 9037838 | MULTIPROCESSOR MESSAGING SYSTEM | EMC Corporation |
| 13251155 | | [REDACTED] | EMC Corporation |
| 13251159 | 8814424 | POWER MEASUREMENT TRANSDUCER | EMC Corporation |
| 13251163 | | [REDACTED] | EMC Corporation |
| 13251166 | 9069039 | POWER MEASUREMENT TRANSDUCER | EMC Corporation |
| 13251170 | 8814425 | POWER MEASUREMENT TRANSDUCER | EMC Corporation |
| | | | |
| 13251184 | 9229951 | KEY VALUE DATABASES FOR VIRTUAL BACKUPS | EMC Corporation |
| 13251186 | 9311327 | UPDATING KEY VALUE DATABASES FOR VIRTUAL BACKUPS | EMC Corporation |
| 13251188 | 9158632 | EFFICIENT FILE BROWSING USING KEY VALUE DATABASES FOR VIRTUAL BACKUPS | EMC Corporation |
| 13251189 | 8849777 | FILE DELETION DETECTION IN KEY VALUE DATABASES FOR VIRTUAL BACKUPS | EMC Corporation |
| 13275706 | | TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |
| 13281574 | 8756695 | ANALYSIS OF BINARY CODE | EMC Corporation |
| 13282376 | 8903877 | EXTENT OF DATA BLOCKS AS AN ALLOCATION UNIT IN A UNIX- BASED FILE SYSTEM | EMC Corporation |
| 13284075 | 8498968 | METHOD AND APPARATUS FOR MANAGING AND ARCHIVING PERFORMANCE INFORMATION RELATING TO STORAGE SYSTEM | EMC Corporation |
| 13287866 | 8671414 | ACCELERATING DATA INTENSIVE COMPUTING APPLICATIONS BY REDUCING OVERHEAD ASSOCIATED WITH COMMUNICATION PROTOCOLS | EMC Corporation |
| 13287901 | | [REDACTED] | EMC Corporation |
| 13290838 | | [REDACTED] | EMC Corporation |
| 13290858 | 9275059 | GENOME BIG DATA INDEXING | EMC Corporation |
| 13296334 | 8990495 | SECURE DATA STORAGE IN RAID MEMORY DEVICES | EMC Corporation |
| 13297911 | 8793371 | COMMON CONFIGURATION WAREHOUSE FOR A STORAGE SYSTEM | EMC Corporation |
| 13301323 | 8335890 | ASSOCIATING AN IDENTIFIER WITH A CONTENT UNIT | EMC Corporation |
| 13301722 | 8417689 | PROGRAMMING MODEL FOR TRANSPARENT PARALLELIZATION OF COMBINATORIAL OPTIMIZATION | EMC Corporation |
| | | | |

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|---|---|---|---|
| 13303069 | 8238953 | DATA MESSAGE PROCESSING | EMC Corporation |
| | | | |
| 13308193 | | [REDACTED] | EMC Corporation |
| 13308262 | 8738857 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 13308305 | 9208098 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 13308345 | 8738858 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 13308366 | 8725939 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 13308378 | | [REDACTED] | EMC Corporation |
| 13308402 | | [REDACTED] | EMC Corporation |
| 13308877 | 8712962 | SNAPSHOTS IN DEDUPLICATION | EMC Corporation |
| 13310486 | 8972353 | SYSTEM AND METHOD OF ENHANCED BACKUP AND RECOVERY CONFIGURATION | EMC Corporation |
| 13311590 | 8949560 | VALIDATING AN ABILITY TO ROLL BACK DATA TO AN EARLIER POINT IN TIME FOR DATA ASSOCIATED WITH A VIRTUAL STORE | EMC Corporation |
| 13313070 | 8478303 | DETERMINING A CURRENT LOCATION OF A DATA STORAGE SYSTEM | EMC Corporation |
| 13314849 | 8838849 | LINK SHARING FOR MULTIPLE REPLICATION MODES | EMC Corporation |
| 13315573 | 8971916 | LOCATING A DATA STORAGE SYSTEM | EMC Corporation |
| 13316946 | | SYSTEM AND METHOD FOR REVIEWING ROLE DEFINITIONS | EMC Corporation |
| 13317792 | 8600943 | PORTING REPLICATION RELATIONSHIPS | EMC Corporation |
| 13324806 | 8732418 | SHADOW REGISTRY | EMC Corporation |
| 13325131 | 8752144 | TARGETED BIOMETRIC CHALLENGES | EMC Corporation |
| 13329072 | 9026505 | STORING DIFFERENCES BETWEEN PRECOMPRESSED AND RECOMPRESSED DATA FILES | EMC Corporation |
| 13329377 | 8478688 | RAPID TRANSACTION PROCESSING | EMC Corporation |
| 13329469 | 9158828 | TECHNIQUES USING ASSOCIATED OBJECT PROPERTIES | EMC Corporation |
| 13329685 | 8375385 | TECHNIQUES FOR PARALLEL DRIVE UPGRADE WHILE MAINTAINING HOST ACCESSIBILITY | EMC Corporation |
| 13329725 | 8464101 | CAS COMMAND NETWORK REPLICATION | EMC Corporation |
| 13329758 | 8966211 | TECHNIQUES FOR DYNAMIC BINDING OF DEVICE IDENTIFIERS TO DATA STORAGE DEVICES. | EMC Corporation |
| 13329954 | | [REDACTED] | EMC Corporation |
| 13331010 | 9047017 | TECHNIQUES FOR AUTOMATED EVALUATION AND MOVEMENT OF DATA BETWEEN STORAGE TIERS | EMC Corporation |
| 13331478 | 8930568 | METHOD AND APPARATUS FOR ENABLING ACCESS TO STORAGE | EMC Corporation |
| | | | |
| 13332132 | 9367397 | RECOVERING DATA LOST IN DATA DE-DUPLICATION SYSTEM | EMC Corporation |
| 13332291 | 8850133 | USING DYNAMIC BLOCK SIZES IN DATA TRANSFER OPERATIONS | EMC Corporation |
| 13332474 | 8972678 | EFFICIENT BACKUP REPLICATION | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13332563 | 9053027 | TECHNIQUES FOR MAINTAINING AND RESTORING DIRTY CACHES ACROSS CPU RESETS | EMC Corporation |
| 13332889 | | [REDACTED] | EMC Corporation |
| 13332936 | 8631475 | ORDERING INPUTS FOR ORDER DEPENDENT PROCESSING | EMC Corporation |
| 13332953 | | [REDACTED] | EMC Corporation |
| 13333233 | 8601544 | COMPUTER SYSTEM EMPLOYING DUAL-BAND AUTHENTICATION USING FILE OPERATIONS BY TRUSTED AND UNTRUSTED MECHANISMS | EMC Corporation |
| 13333307 | 8700678 | DATA PROVENANCE IN COMPUTING INFRASTRUCTURE | EMC Corporation |
| 13333887 | | [REDACTED] | EMC Corporation |
| 13334479 | 8688927 | CAPACITY FORECASTING FOR BACKUP STORAGE | EMC Corporation |
| 13334499 | 9026752 | EFFICIENTLY ESTIMATING COMPRESSION RATIO IN A DEDUPLICATING FILE SYSTEM | EMC Corporation |
| 13334506 | 8903991 | CLUSTERED COMPUTER SYSTEM USING ARP PROTOCOL TO IDENTIFY CONNECTIVITY ISSUES | EMC Corporation |
| 13334636 | 8782465 | MANAGING DRIVE PROBLEMS IN DATA STORAGE SYSTEMS BY TRACKING OVERALL RETRY TIME | EMC Corporation |
| 13334665 | 8838858 | MANAGING COMMAND LINE INTERFACE COMMANDS | EMC Corporation |
| 13334702 | 9087322 | ADAPTING SERVICE PROVIDER PRODUCTS FOR MULTI-TENANCY USING TENANT-SPECIFIC SERVICE COMPOSITION FUNCTIONS | EMC Corporation |
| 13334709 | 9008303 | METHODS AND APPARATUS FOR GENERATING FORWARD SECURE PSEUDORANDOM NUMBERS | EMC Corporation |
| 13334723 | 8712963 | METHOD AND APPARATUS FOR CONTENT-AWARE RESIZING OF DATA CHUNKS FOR REPLICATION | EMC Corporation |
| 13334732 | 8639669 | METHOD AND APPARATUS FOR DETERMINING OPTIMAL CHUNK SIZES OF A DEDUPLICATED STORAGE SYSTEM | EMC Corporation |
| 13334749 | 8782218 | ACTIVITY STREAM BASED ALERT PROCESSING FOR INFORMATION TECHNOLOGY INFRASTRUCTURE | EMC Corporation |
| 13334853 | 8688703 | METADATA CACHE SUPPORTING MULTIPLE HETEROGENEOUS SYSTEMS | EMC Corporation |
| 13334884 | 8898444 | TECHNIQUES FOR PROVIDING A FIRST COMPUTER SYSTEM ACCESS TO STORAGE DEVICES INDIRECTLY THROUGH A SECOND COMPUTER SYSTEM | EMC Corporation |
| 13335252 | 9367687 | METHOD FOR MALWARE DETECTION USING DEEP INSPECTION AND DATA DISCOVERY AGENTS | EMC Corporation |
| 13335265 | | [REDACTED] | EMC Corporation |
| 13335298 | | [REDACTED] | EMC Corporation |
| 13335316 | 8825919 | PATH PERFORMANCE DATA COLLECTION | EMC Corporation |
| 13335416 | 8914338 | OUT-OF-CORE SIMILARITY MATCHING | EMC Corporation |
| 13335459 | 9286303 | UNIFIED CATALOG SERVICE | EMC Corporation |
| 13335746 | 8631052 | EFFICIENT CONTENT META-DATA COLLECTION AND TRACE GENERATION FROM DEDUPLICATED STORAGE | EMC Corporation |
| 13335750 | 8667032 | EFFICIENT CONTENT META-DATA COLLECTION AND TRACE GENERATION FROM DEDUPLICATED STORAGE | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13336043 | | [REDACTED] | EMC Corporation |
| 13336056 | | [REDACTED] | EMC Corporation |
| 13336236 | 8707050 | INTEGRITY SELF-CHECK OF SECURE CODE WITHIN A VM ENVIRONMENT USING NATIVE VM CODE | EMC Corporation |
| 13336380 | 8924668 | METHOD AND APPARATUS FOR AN APPLICATION- AND OBJECT-LEVEL I/O SPLITTER | EMC Corporation |
| 13336410 | 8966293 | METHOD AND APPARATUS FOR ALLOCATION OF POWER CONSUMPTION OF A COMPUTER STORAGE SYSTEM TO ITS TENANTS | EMC Corporation |
| 13336545 | 8839028 | MANAGING DATA AVAILABILITY IN STORAGE SYSTEMS | EMC Corporation |
| 13336570 | 8701199 | ESTABLISHING A TRUSTED SESSION FROM A NON-WEB CLIENT USING ADAPTIVE AUTHENTICATION | EMC Corporation |
| 13336573 | 8902045 | AUTHENTICATION USING PULSE DATA | EMC Corporation |
| 13336613 | 8838556 | MANAGING DATA SETS BY REASONING OVER CAPTURED METADATA | EMC Corporation |
| 13336704 | | [REDACTED] | EMC Corporation |
| 13336849 | 8774410 | SECRET SHARING IN CRYPTOGRAPHIC DEVICES VIA CONTROLLED RELEASE OF PLAINTEXT INFORMATION | EMC Corporation |
| 13336894 | 9158804 | METHOD AND SYSTEM FOR EFFICIENT FILE-BASED BACKUPS BY REVERSE MAPPING CHANGED SECTORS/BLOCKS ON AN NTFS VOLUME TO FILES | EMC Corporation |
| 13336898 | | [REDACTED] | EMC Corporation |
| 13337442 | 9154556 | MANAGING ACCESS TO A LIMITED NUMBER OF COMPUTERIZED SESSIONS | EMC Corporation |
| 13337605 | 8738813 | METHOD AND APPARATUS FOR ROUND TRIP SYNCHRONOUS REPLICATION USING SCSI READS | EMC Corporation |
| 13337651 | 8769336 | METHOD AND APPARATUS FOR PREVENTING JOURNAL LOSS ON FAILOVER IN SYMMETRIC CONTINUOUS DATA PROTECTION REPLICATION | EMC Corporation |
| 13337678 | 8996827 | CREATING AND MAINTAINING CLONES IN CONTINUOUS DATA PROTECTION | EMC Corporation |
| 13337817 | 9021271 | INJECTING CODE DECRYPTED BY A HARDWARE DECRYPTION MODULE INTO JAVA APPLICATIONS | EMC Corporation |
| 13338131 | 8578093 | MANAGING INDICATIONS IN DATA STORAGE SYSTEMS | EMC Corporation |
| 13338140 | | [REDACTED] | EMC Corporation |
| 13338413 | 8528085 | METHOD AND SYSTEM FOR PREVENTING DE-DUPLICATION SIDE-CHANNEL ATTACKS IN CLOUD STORAGE SYSTEMS | EMC Corporation |
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| 13338543 | 9164864 | MINIMIZING FALSE NEGATIVE AND DUPLICATE HEALTH MONITORING ALERTS IN A DUAL MASTER SHARED NOTHING DATABASE APPLIANCE | EMC Corporation |
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| | | | |
| 13338616 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13338619 | | [REDACTED] | EMC Corporation |
| 13338719 | | [REDACTED] | EMC Corporation |
| 13338788 | 8977826 | EXTENT COMMANDS IN REPLICATION | EMC Corporation |
| 13338808 | 9031913 | FILE REPLICATION | EMC Corporation |
| 13338864 | 8706683 | KNOWLEDGE MANAGEMENT ACROSS DISTRIBUTED ENTITY | EMC Corporation |
| 13338886 | 9361269 | KNOWLEDGE MANAGEMENT ACROSS DISTRIBUTED ENTITY USING PREDICTIVE ANALYSIS | EMC Corporation |
| 13339289 | 8996490 | MANAGING LOGICAL VIEWS OF DIRECTORIES | EMC Corporation |
| 13339309 | 9135123 | MANAGING GLOBAL DATA CACHES FOR FILE SYSTEM | EMC Corporation |
| 13339570 | 8880027 | AUTHENTICATING TO A COMPUTING DEVICE WITH A NEAR-FIELD COMMUNICATIONS CARD | EMC Corporation |
| 13339585 | 9152818 | TECHNIQUES FOR MANAGING CONSUMER AUTHENTICATION | EMC Corporation |
| 13339669 | 8799608 | TECHNIQUES INVOLVING FLAKY PATH DETECTION | EMC Corporation |
| 13339693 | 8819307 | IDENTIFICATION AND USE OF PREFERRED PATH GROUPS IN HOST COMPUTER BASED ON DIFFERENTIAL PERFORMANCE | EMC Corporation |
| 13339768 | 8799334 | REMOTE VERIFICATION OF FILE PROTECTIONS FOR CLOUD DATA STORAGE | EMC Corporation |
| 13339780 | 9032160 | CONTINUOUS DATA REPLICATION | EMC Corporation |
| 13339857 | 8818951 | DISTRIBUTED FILE SYSTEM HAVING SEPARATE DATA AND METADATA AND PROVIDING A CONSISTENT SNAPSHOT THEREOF | EMC Corporation |
| 13340007 | 8832224 | DATA TRACKING FOR PROVENANCE AND CHAIN OF CUSTODY GENERATION | EMC Corporation |
| 13340104 | 8996690 | TIME-BASED ANALYSIS OF DATA STREAMS | EMC Corporation |
| 13340768 | 8850575 | GEOLOCATION ERROR TRACKING IN TRANSACTION PROCESSING | EMC Corporation |
| 13340829 | | [REDACTED] | EMC Corporation |
| 13340912 | 9330009 | MANAGING DATA STORAGE | EMC Corporation |
| 13340945 | | [REDACTED] | EMC Corporation |
| 13340958 | 9128901 | CONTINUOUS PROTECTION OF DATA AND STORAGE MANAGEMENT CONFIGURATION | EMC Corporation |
| 13341006 | | [REDACTED] | EMC Corporation |
| 13341112 | | [REDACTED] | EMC Corporation |
| 13341160 | 8752145 | BIOMETRIC AUTHENTICATION WITH SMART MOBILE DEVICE | EMC Corporation |
| 13341167 | 9367195 | DISPLAYING CURRENT LOCATION OF COMPONENTS IN A DATA STORAGE SYSTEM | EMC Corporation |
| 13341174 | 8683592 | ASSOCIATING NETWORK AND STORAGE ACTIVITIES FOR FORENSIC ANALYSIS | EMC Corporation |
| 13341193 | 8904061 | MANAGING STORAGE OPERATIONS IN A SERVER CACHE | EMC Corporation |
| | | | |
| 13341332 | 9104529 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 13341343 | 8452901 | ORDERED KERNEL QUEUE FOR MULTIPATHING EVENTS | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13341345 | 8627012 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 13341348 | 8751757 | ACQUISITION AND KERNEL MEMORY STORAGE OF I/O METRICS | EMC Corporation |
| 13341354 | 8627275 | TECHNIQUE FOR ACQUIRING DATA STORAGE METRICS | EMC Corporation |
| 13341408 | 9009416 | SYSTEM AND METHOD FOR MANAGING CACHE SYSTEM CONTENT DIRECTORIES | EMC Corporation |
| 13341422 | 9053033 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
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| 13341439 | 9235524 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 13341463 | 8930947 | SYSTEM AND METHOD FOR LIVE MIGRATION OF A VIRTUAL MACHINE WITH DEDICATED CACHE | EMC Corporation |
| | | | |
| 13341663 | 8675672 | HIERARCHICAL CLUSTER TREE OVERLAY NETWORK | EMC Corporation |
| 13342008 | 9075754 | MANAGING CACHE BACKUP AND RESTORE | EMC Corporation |
| 13342009 | | [REDACTED] | EMC Corporation |
| 13342010 | | [REDACTED] | EMC Corporation |
| 13342011 | | [REDACTED] | EMC Corporation |
| 13344536 | 8732141 | PASSING INFORMATION BETWEEN SERVER AND CLIENT USING A DATA PACKAGE | EMC Corporation |
| 13348508 | 8516022 | AUTOMATICALLY COMMITTING FILES TO BE WRITE-ONCE-READ-MANY IN A FILE SYSTEM | EMC Corporation |
| 13348558 | 8275808 | IDENTIFIERS FOR NON-SEARCHABLE ATTRIBUTES | EMC Corporation |
| 13349224 | 8489816 | PREDICTING AND OPTIMIZING I/O PERFORMANCE CHARACTERISTICS IN A MULTI-LEVEL CACHING SYSTEM | EMC Corporation |
| | | | |
| 13358859 | 8370311 | USING VERSIONING TO BACK UP MULTIPLE VERSIONS OF A STORED OBJECT | EMC Corporation |
| 13363237 | 8516309 | METHOD OF DEBUGGING A SOFTWARE SYSTEM | EMC Corporation |
| 13363893 | | [REDACTED] | EMC Corporation |
| 13365768 | 9021264 | METHOD AND SYSTEM FOR CLOUD BASED STORAGE | EMC Corporation |
| | | | |
| 13370260 | 9009202 | GARBAGE COLLECTION FOR MERGED COLLECTIONS | EMC Corporation |
| 13371337 | 8738569 | SYSTEMATIC VERIFICATION OF DATABASE METADATA UPGRADE | EMC Corporation |
| 13398163 | 9032061 | POLICY-BASED INTELLIGENT DATA PLACEMENT | EMC Corporation |
| 13400992 | | [REDACTED] | EMC Corporation |
| 13402324 | 8788913 | SELECTION OF ERASURE CODE PARAMETERS FOR NO DATA REPAIR | EMC Corporation |
| 13402329 | 8977660 | MULTI-LEVEL DISTRIBUTED HASH TABLE FOR DATA STORAGE IN A HIERARCHICALLY ARRANGED NETWORK | EMC Corporation |
| 13402331 | 9204103 | TECHNIQUE FOR PARALLEL, DISTRIBUTED VIDEO PROCESSING | EMC Corporation |

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|---|---|---|---|
| 13404129 | | HYPERVISOR VIRTUAL SERVER SYSTEM, HAS VIRTUAL DATA SERVICES APPLIANCE RECEIVING INTERCEPTED INPUT/OUTPUT REQUESTS FROM TAPPING DRIVER | EMC Corporation |
| 13404780 | 8984609 | METHODS AND APPARATUS FOR EMBEDDING AUXILIARY INFORMATION IN ONE-TIME PASSCODES | EMC Corporation |
| 13404839 | | [REDACTED] | EMC Corporation |
| 13407980 | 8861527 | NETWORK-ASSISTED ROUTING FOR TOPOLOGY-AWARE OVERLAY NETWORKS | EMC Corporation |
| 13409413 | | [REDACTED] | EMC Corporation |
| 13411606 | 8365043 | EFFICIENT REDUNDANT MEMORY UNIT ARRAY | EMC Corporation |
| 13411936 | 8332612 | SYSTEMS AND METHODS FOR USING THIN PROVISIONING TO RECLAIM SPACE IDENTIFIED BY DATA REDUCTION PROCESSES | EMC Corporation |
| 13414896 | 8776086 | AGENT MANAGEMENT FRAMEWORK | EMC Corporation |
| 13418536 | 8892947 | METHOD AND SYSTEM FOR AUTOMATION FRAMEWORK FOR MULTI-NODE ENVIRONMENTS | EMC Corporation |
| 13419647 | | [REDACTED] | EMC Corporation |
| 13419651 | 9323789 | AUTOMATED APPLICATION PROTECTION AND REUSE USING A WORKFLOW COMPONENT | EMC Corporation |
| 13419910 | 8880952 | GENERIC AND EXTENSIBLE PROVIDER DEBUG INTERFACE | EMC Corporation |
| 13420633 | 8799705 | DATA PROTECTION IN A RANDOM ACCESS DISK ARRAY | EMC Corporation |
| 13421227 | 8799927 | TECHNIQUES FOR USE WITH REPETITIVE EVENT OCCURRENCES | EMC Corporation |
| 13421759 | 8861193 | HARD DRIVE CARRIER WITH VIBRATION ISOLATION | EMC Corporation |
| 13424542 | 8868505 | SYSTEMS AND METHODS FOR PROTECTING DATA IN A NETWORK HOST ENVIRONMENT | EMC Corporation |
| 13424589 | 9047018 | METHOD AND SYSTEM FOR ZERO-COPY DISK IO USING SECTOR UNALIGNED BUFFERS | EMC Corporation |
| 13424955 | 8825848 | ORDERING OF EVENT RECORDS IN AN ELECTRONIC SYSTEM FOR FORENSIC ANALYSIS | EMC Corporation |
| 13425528 | 9197522 | NATIVE STORAGE DATA COLLECTION USING MULTIPLE DATA COLLECTION PLUG-INS INSTALLED IN A COMPONENT SEPARATE FROM DATA SOURCES OF ONE OR MORE STORAGE AREA NETWORKS | EMC Corporation |
| 13427023 | | [REDACTED] | EMC Corporation |
| 13427805 | | [REDACTED] | EMC Corporation |
| 13428110 | 9122857 | AUTHENTICATING A USER IN AN AUTHENTICATION SYSTEM | EMC Corporation |
| 13429498 | 9026492 | MULTISITE REPLICATION WITH UNCOORDINATED CYCLE SWITCHING | EMC Corporation |
| 13429504 | 8732124 | MULTISITE REPLICATION WITH COORDINATED CYCLE SWITCHING | EMC Corporation |
| 13429524 | 9195631 | PROVIDING HISTORICAL DATA TO AN EVENT-BASED ANALYSIS ENGINE | EMC Corporation |
| 13429622 | 8972694 | DYNAMIC STORAGE ALLOCATION WITH VIRTUALLY PROVISIONED DEVICES | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13429669 | 8862837 | TECHNIQUES FOR AUTOMATED DATA COMPRESSION AND DECOMPRESSION | EMC Corporation |
| 13429883 | | [REDACTED] | EMC Corporation |
| 13429919 | 9026667 | TECHNIQUES FOR RESOURCE VALIDATION | EMC Corporation |
| 13430152 | 9128625 | SYSTEMS AND METHODS FOR PHYSICAL MEMORY RESERVATION FOR USER-SPACE PROGRAMS | EMC Corporation |
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| | | | |
| 13431011 | | [REDACTED] | EMC Corporation |
| 13431071 | 9335948 | METHOD AND APPARATUS FOR ENABLING ACCESS TO TIERED SHARED STORAGE USING DYNAMIC TIER PARTITIONING | EMC Corporation |
| 13431193 | 8699715 | ON-DEMAND PROACTIVE EPOCH CONTROL FOR CRYPTOGRAPHIC DEVICES | EMC Corporation |
| 13431214 | | [REDACTED] | EMC Corporation |
| 13431224 | | [REDACTED] | EMC Corporation |
| 13431231 | 9015231 | DISTRIBUTED ANONYMIZED COMMUNICATIONS | EMC Corporation |
| 13431264 | 8839043 | MANAGING A PORT FAILOVER IN A DATA STORAGE SYSTEM | EMC Corporation |
| 13431297 | | [REDACTED] | EMC Corporation |
| 13431409 | 9218252 | TECHNIQUES FOR PERFORMING DATA VALIDATION | EMC Corporation |
| 13431501 | | [REDACTED] | EMC Corporation |
| 13431621 | 8375015 | RETRIEVAL OF SEARCHABLE AND NON-SEARCHABLE ATTRIBUTES | EMC Corporation |
| | | | |
| 13432184 | | [REDACTED] | EMC Corporation |
| | | | |
| 13432276 | 8583607 | MANAGING DEDUPLICATION DENSITY | EMC Corporation |
| 13432312 | 8712976 | MANAGING DEDUPLICATION DENSITY | EMC Corporation |
| 13432457 | 8739257 | MANAGING AUTHENTICATION OF VIRTUAL CLIENTS | EMC Corporation |
| 13432491 | 8832640 | COMPONENT MAPPED SOFTWARE DEVELOPMENT WORKFLOW | EMC Corporation |
| 13432522 | 9009352 | TRANSFORMATION OF COMMON INFORMATION MODEL MESSAGES | EMC Corporation |
| 13432543 | 9112870 | PROCESSING DEVICE HAVING SESSION COMPONENT WITH INTEGRATED SUPPORT FOR MESSAGE QUEUING PROTOCOL | EMC Corporation |
| 13432550 | 8700861 | MANAGING A DYNAMIC LIST OF ENTRIES FOR CACHE PAGE CLEANING | EMC Corporation |
| 13432577 | 8635465 | COUNTER-BASED ENCRYPTION OF STORED DATA BLOCKS | EMC Corporation |
| 13432686 | 9122564 | EVALUATING A SYSTEM EVENT | EMC Corporation |
| 13432732 | 9119539 | PERFORMING AN AUTHENTICATION OPERATION DURING USER ACCESS TO A COMPUTERIZED RESOURCE | EMC Corporation |
| 13433477 | 8775756 | METHOD OF VERIFYING INTEGRITY OF DATA WRITTEN BY A MAINFRAME TO A VIRTUAL TAPE AND PROVIDING FEEDBACK OF ERRORS | EMC Corporation |
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| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13433602 | 8515904 | PROVIDING FILE SYSTEM QUOTA SUPPORT FOR A FILE SYSTEM HAVING SEPARATED DATA AND METADATA | EMC Corporation |
| 13433633 | 8880441 | CLICK STREAM ANALYSIS FOR FRAUD DETECTION | EMC Corporation |
| 13433636 | 8943282 | MANAGING SNAPSHOT IN CACHE-BASED STORAGE SYSTEMS | EMC Corporation |
| 13433885 | 8682852 | ASYMMETRIC ASYNCHRONOUS MIRRORING FOR HIGH AVAILABILITY | EMC Corporation |
| 13433995 | | [REDACTED] | EMC Corporation |
| 13434087 | | [REDACTED] | EMC Corporation |
| 13434257 | 8925058 | AUTHENTICATION INVOLVING AUTHENTICATION OPERATIONS WHICH CROSS REFERENCE AUTHENTICATION FACTORS | EMC Corporation |
| 13434264 | 9100343 | STORAGE DESCRIPTORS AND SERVICE CATALOGS IN A CLOUD ENVIRONMENT | EMC Corporation |
| 13434272 | 8875263 | CONTROLLING A SOFT TOKEN RUNNING WITHIN AN ELECTRONIC APPARATUS | EMC Corporation |
| 13434280 | 8752146 | PROVIDING AUTHENTICATION CODES WHICH INCLUDE TOKEN CODES AND BIOMETRIC FACTORS | EMC Corporation |
| 13434348 | 9116915 | INCREMENTAL SCAN | EMC Corporation |
| 13434447 | 8600945 | CONTINUOUS DATA REPLICATION | EMC Corporation |
| 13434448 | 8615500 | PARTIAL BLOCK ALLOCATION FOR FILE SYSTEM BLOCK COMPRESSION USING VIRTUAL BLOCK METADATA | EMC Corporation |
| 13434517 | | [REDACTED] | EMC Corporation |
| 13434543 | 8850144 | ACTIVE REPLICATION SWITCH | EMC Corporation |
| 13434620 | 9037818 | ACTIVE REPLICATION SWITCH | EMC Corporation |
| 13434983 | 9183595 | USING LINK STRENGTH IN KNOWLEDGE-BASED AUTHENTICATION | EMC Corporation |
| 13434991 | 9131374 | KNOWLEDGE-BASED AUTHENTICATION FOR RESTRICTING ACCESS TO MOBILE DEVICES | EMC Corporation |
| 13434993 | 8776195 | COMMON DATA FORMAT IN KNOWLEDGE-BASED AUTHENTICATION | EMC Corporation |
| 13435009 | | [REDACTED] | EMC Corporation |
| 13435017 | 9170951 | METHOD AND APPARATUS FOR EVENT/ALERT ENRICHMENT | EMC Corporation |
| 13435049 | 8725878 | METHOD AND APPARATUS FOR TOPOLOGY DRIVEN ZONING | EMC Corporation |
| 13435104 | 8694781 | TECHNIQUES FOR PROVIDING HARDWARE SECURITY MODULE OPERABILITY | EMC Corporation |
| 13435146 | | [REDACTED] | EMC Corporation |
| 13435183 | 8812542 | ON-THE-FLY DETERMINING OF ALERT RELATIONSHIPS IN A DISTRIBUTED SYSTEM | EMC Corporation |
| 13435206 | 9207877 | DETECTION AND AVOIDANCE OF STALLED FILESYSTEMS TO PREVENT STALLING OF VIRTUAL TAPE DRIVES DURING TAPE MOUNTS | EMC Corporation |
| 13435294 | 8997120 | LIGHTWEIGHT COMMUNICATION CHANNEL FOR CONTROL OF DEVICE DRIVER COMPONENTS | EMC Corporation |
| 13435307 | 9152550 | STORAGE SYSTEM WITH DYNAMIC TRANSFER OF BLOCK FILE SYSTEM OWNERSHIP FOR LOAD BUILDING | EMC Corporation |

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|---|---|---|---|
| 13435317 | 9158734 | METHOD AND APPARATUS FOR ELASTIC PROVISIONING | EMC Corporation |
| 13435328 | 8990520 | GLOBAL MEMORY AS NON-VOLATILE RANDOM ACCESS MEMORY FOR GUEST OPERATING SYSTEMS | EMC Corporation |
| 13435360 | 8838887 | DRIVE PARTITIONING FOR AUTOMATED STORAGE TIERING | EMC Corporation |
| 13435397 | | [REDACTED] | EMC Corporation |
| 13435415 | 8838931 | TECHNIQUES FOR AUTOMATED DISCOVERY AND PERFORMING STORAGE OPTIMIZATIONS ON A COMPONENT EXTERNAL TO A DATA STORAGE SYSTEM | EMC Corporation |
| 13435462 | 8868797 | TECHNIQUES FOR AUTOMATED DISCOVERY OF STORAGE DEVICES AND THEIR PERFORMANCE CHARACTERISTICS | EMC Corporation |
| 13435480 | 9336340 | EVALUATING MANAGEMENT OPERATIONS | EMC Corporation |
| 13435519 | 9047169 | RESIZING SNAPSHOT MOUNT POINTS | EMC Corporation |
| 13435555 | 8793452 | METHOD OF GUARANTEEING REPLICATION OF DATA WRITTEN BY A MAINFRAME TO A VIRTUAL TAPE | EMC Corporation |
| 13435606 | 8819769 | MANAGING USER ACCESS WITH MOBILE DEVICE POSTURE | EMC Corporation |
| 13435611 | 8683570 | SCHEDULING SOFT TOKEN DATA TRANSMISSION | EMC Corporation |
| 13435616 | 8683563 | SOFT TOKEN POSTURE ASSESSMENT | EMC Corporation |
| 13435737 | 8996671 | METHOD OF PROVIDING SERVICE-PROVIDER-SPECIFIC SUPPORT LINK DATA TO A CLIENT IN A STORAGE CONTEXT | EMC Corporation |
| 13435832 | 9218138 | RESTORING SNAPSHOTS TO CONSISTENCY GROUPS OF MOUNT POINTS | EMC Corporation |
| 13435848 | 8752156 | DETECTING SOFT TOKEN COPIES | EMC Corporation |
| 13435907 | 8977825 | TECHNIQUES FOR ABSTRACT PROFILE DEFINITION TO SUPPORT INFORMATION HIDING | EMC Corporation |
| 13435917 | 9003129 | TECHNIQUES FOR INTER-STORAGE-PROCESSOR CACHE COMMUNICATION USING TOKENS | EMC Corporation |
| 13435951 | 8904496 | AUTHENTICATING BASED ON A CURRENT LOCATION OF A COMMUNICATIONS DEVICE ASSOCIATED WITH AN ENTITY | EMC Corporation |
| | | | |
| | | | |
| 13436020 | 8782795 | SECURE TENANT ASSESSMENT OF INFORMATION TECHNOLOGY INFRASTRUCTURE | EMC Corporation |
| 13436080 | 9009844 | METHODS AND APPARATUS FOR KNOWLEDGE-BASED AUTHENTICATION USING HISTORICALLY-AWARE QUESTIONNAIRES | EMC Corporation |
| 13436117 | 8850145 | MANAGING CONSISTENCY GROUPS IN STORAGE SYSTEMS | EMC Corporation |
| 13436125 | 9021553 | METHODS AND APPARATUS FOR FRAUD DETECTION AND REMEDIATION IN KNOWLEDGE-BASED AUTHENTICATION | EMC Corporation |
| 13436419 | 8838634 | CUSTOM USER PARALLEL DATA IMPORT AND EXPORT | EMC Corporation |
| 13436449 | 8738571 | EXTENDED RECYCLE BIN | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13436454 | 8719286 | SYSTEM AND METHOD FOR BLOCK-BASED SUBTREE VIRTUAL MACHINE BACKUP | EMC Corporation |
| 13436460 | 8751515 | SYSTEM AND METHOD FOR FILE-BASED VIRTUAL MACHINE INCREMENTAL BACKUP | EMC Corporation |
| | | | |
| 13436495 | | [REDACTED] | EMC Corporation |
| 13436533 | | [REDACTED] | EMC Corporation |
| 13436614 | 9158763 | CATALOGING STORAGE ARRAYS | EMC Corporation |
| 13436630 | | [REDACTED] | EMC Corporation |
| 13436636 | 8782008 | DYNAMIC PROXY SERVER ASSIGNMENT FOR VIRTUAL MACHINE BACKUP | EMC Corporation |
| 13436641 | | [REDACTED] | EMC Corporation |
| 13436677 | | [REDACTED] | EMC Corporation |
| 13436680 | | [REDACTED] | EMC Corporation |
| 13436702 | 9152820 | METHOD AND APPARATUS FOR COOKIE ANONYMIZATION AND REJECTION | EMC Corporation |
| 13436715 | | [REDACTED] | EMC Corporation |
| 13436717 | 8898519 | METHOD AND APPARATUS FOR AN ASYNCHRONOUS SPLITTER | EMC Corporation |
| 13436720 | 9081754 | METHOD AND APPARATUS FOR CASCADED REPLICATION USING A MULTI-SPLITTER | EMC Corporation |
| 13436725 | 9189341 | METHOD AND APPARATUS FOR MULTI-COPY REPLICATION USING A MULTI SPLITTER | EMC Corporation |
| 13436771 | 9021275 | METHOD AND APPARATUS TO EXERCISE AND MANAGE A RELATED SET OF POWER MANAGED STORAGE DEVICES | EMC Corporation |
| 13436778 | 8862923 | METHOD AND APPARATUS TO DETERMINE AN IDLE STATE OF A DEVICE SET BASED ON AVAILABILITY REQUIREMENTS CORRESPONDING TO THE DEVICE SET | EMC Corporation |
| 13436862 | 9063892 | MANAGING RESTORE OPERATIONS USING DATA LESS WRITES | EMC Corporation |
| 13436885 | 9026708 | FIELD SERVICEABLE IT SYSTEM | EMC Corporation |
| 13436894 | 8909886 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE UPON DETECTING A MIGRATION EVENT | EMC Corporation |
| 13436897 | 8966190 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 13436899 | 8914583 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 13436901 | | [REDACTED] | EMC Corporation |
| 13436902 | 8913392 | LOCKING / INDICATION SYSTEM | EMC Corporation |
| 13436906 | 8886883 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 13436907 | 8780542 | SYSTEM AND METHOD FOR GENERATING ELECTRICITY FROM COMPONENT WASTE HEAT | EMC Corporation |
| 13436909 | 8964398 | LOCKING/INDICATION SYSTEM | EMC Corporation |
| 13436911 | 8874799 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 13436914 | 8816199 | CABLE ROUTING SYSTEM | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13436915 | 8914584 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE UPON DETECTION OF A LUN CONTROL EVENT | EMC Corporation |
| 13436918 | 8554954 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 13436919 | 8764468 | ADAPTIVE CONNECTOR ASSEMBLY | EMC Corporation |
| 13436920 | 8914585 | SYSTEM AND METHOD FOR OBTAINING CONTROL OF A LOGICAL UNIT NUMBER | EMC Corporation |
| | | | |
| 13436936 | 9292793 | ANALYZING DEVICE SIMILARITY | EMC Corporation |
| 13436941 | 9015120 | HEURISTIC FILE SELECTION FOR BACKUP | EMC Corporation |
| 13436943 | 8756201 | FILE TYPE DATABASES | EMC Corporation |
| 13436945 | 8676764 | FILE CLUSTER CREATION | EMC Corporation |
| 13437784 | 8364917 | REPLICATION OF DEDUPLICATED STORAGE SYSTEM | EMC Corporation |
| 13439063 | | [REDACTED] | EMC Corporation |
| 13439293 | 9230129 | SOFTWARE TRUSTED COMPUTING BASE | EMC Corporation |
| 13440186 | 8600952 | TECHNIQUES FOR PROCESSING RECOVERY POINTS | EMC Corporation |
| 13443002 | 8782245 | SYSTEM AND METHOD FOR MANAGING PROVISIONING OF STORAGE RESOURCES IN A NETWORK WITH VIRTUALIZATION OF RESOURCES IN SUCH A NETWORK | EMC Corporation |
| 13443017 | 8769271 | IDENTIFYING AND ENFORCING STRICT FILE CONFIDENTIALITY IN THE PRESENCE OF SYSTEM AND STORAGE ADMINISTRATORS IN A NAS SYSTEM | EMC Corporation |
| 13444562 | 8924682 | METHOD OF PROTECTING VIRTUAL TAPE DATA FROM ACCIDENTAL LOSS DUE TO OVERWRITING | EMC Corporation |
| 13444996 | 8300554 | LAYERED APPROACH FOR REPRESENTING AND ANALYZING VIRTUAL PRIVATE NETWORK SERVICES | EMC Corporation |
| 13447048 | 8478951 | METHOD AND APPARATUS FOR BLOCK LEVEL DATA DE-DUPLICATION | EMC Corporation |
| 13448391 | 8938428 | EFFICIENT INDEX PROCESSING | EMC Corporation |
| 13451878 | 8751831 | ACHIEVING STRONG CRYPTOGRAPHIC CORRELATION BETWEEN HIGHER LEVEL SEMANTIC UNITS AND LOWER LEVEL COMPONENTS IN A SECURE DATA STORAGE SYSTEM | EMC Corporation |
| 13452491 | 8812612 | VERSIONED COALESCER | EMC Corporation |
| 13455044 | | [REDACTED] | EMC Corporation |
| 13460285 | 8386521 | SYSTEM FOR BACKING UP AND RESTORING DATA | EMC Corporation |
| 13460295 | 8402063 | RESTORING DATA BACKED UP IN A CONTENT ADDRESSED STORAGE(CAS) SYSTEM | EMC Corporation |
| 13460711 | | [REDACTED] | EMC Corporation |
| 13460722 | 9110792 | SYSTEM AND METHOD FOR CACHE REPLACEMENT USING BLOOM FILTER LOOKAHEAD APPROACH | EMC Corporation |
| 13461316 | 9104675 | INODE TO PATHNAME SUPPORT WITH A HARD LINK DATABASE | EMC Corporation |
| 13461637 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13464017 | 8423726 | GLOBAL DE-DUPLICATION IN SHARED ARCHITECTURES | EMC Corporation |
| 13464337 | 8578128 | VIRTUAL BLOCK MAPPING FOR RELOCATING COMPRESSED AND/OR ENCRYPTED FILE DATA BLOCK BLOCKS | EMC Corporation |
| 13465275 | | [REDACTED] | EMC Corporation |
| 13466775 | 8935493 | PERFORMING DATA STORAGE OPTIMIZATIONS ACROSS MULTIPLE DATA STORAGE SYSTEMS | EMC Corporation |
| | | | |
| 13470317 | 9141290 | SNAPSHOT MECHANISM | EMC Corporation |
| | | | |
| 13476072 | 8843789 | STORAGE ARRAY NETWORK PATH IMPACT ANALYSIS SERVER FOR PATH SELECTION IN A HOST-BASED I/O MULTI-PATH SYSTEM | EMC Corporation |
| 13476666 | 8549245 | DE-DUPLICATION IN A VIRTUALIZED STORAGE ENVIRONMENT | EMC Corporation |
| 13477999 | 8554725 | SYSTEM AND METHOD FOR HIGHLY RELIABLE DATA REPLICATION | EMC Corporation |
| 13478903 | | [REDACTED] | EMC Corporation |
| 13478969 | 9081611 | SYSTEM FOR ITERATIVELY IDENTIFYING AVAILABLE NEXT HIGHER PRIORITY TRACKS WHEN IDENTIFIED TRACK MATCHING THE TASK'S NATIVE TRACK PRIORITY IS UNAVAILABLE | EMC Corporation |
| 13485506 | 9128973 | METHOD AND SYSTEM FOR TRACKING RE-SIZING AND RE-CREATION OF VOLUMES USING MODIFICATION TIME | EMC Corporation |
| 13490752 | 8892835 | INSERTION OF A VIRTUALIZATION LAYER INTO A REPLICATION ENVIRONMENT | EMC Corporation |
| 13493394 | 8412858 | TECHNIQUES FOR INDICATING A PASSIVE PATH STATE FOR A DEVICE | EMC Corporation |
| 13493638 | | [REDACTED] | EMC Corporation |
| 13495130 | | LOW LATENCY REPLICATION TECHNIQUES WITH CONTENT ADDRESSABLE STORAGE | EMC Corporation |
| 13495795 | 9026740 | PREFETCH DATA NEEDED IN THE NEAR FUTURE FOR DELTA COMPRESSION | EMC Corporation |
| 13495831 | 8918390 | PREFERENTIAL SELECTION OF CANDIDATES FOR DELTA COMPRESSION | EMC Corporation |
| 13495856 | | [REDACTED] | EMC Corporation |
| 13495859 | 9116902 | PREFERENTIAL SELECTION OF CANDIDATES FOR DELTA COMPRESSION | EMC Corporation |
| 13495868 | 8712978 | PREFERENTIAL SELECTION OF CANDIDATES FOR DELTA COMPRESSION | EMC Corporation |
| 13495881 | 9141301 | METHOD FOR CLEANING A DELTA STORAGE SYSTEM | EMC Corporation |
| 13495893 | 8972672 | METHOD FOR CLEANING A DELTA STORAGE SYSTEM | EMC Corporation |
| 13517829 | 9098525 | CONCURRENT ACCESS TO DATA ON SHARED STORAGE THROUGH MULTIPLE ACCESS POINTS | EMC Corporation |
| 13517864 | 8683099 | LOAD BALANCING OF READ/WRITE ACCESSES ON A SINGLE HOST DEVICE | EMC Corporation |
| | | | |
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| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13525492 | | [REDACTED] | EMC Corporation |
| 13525816 | | [REDACTED] | EMC Corporation |
| 13525919 | 8719590 | SECURE PROCESSING IN MULTI-TENANT CLOUD INFRASTRUCTURE | EMC Corporation |
| 13527761 | | [REDACTED] | EMC Corporation |
| 13528241 | | [REDACTED] | EMC Corporation |
| | | | |
| | | | |
| | | | |
| 13529740 | 9342518 | DECLARING DIRECTIVES IN A DATA STORE | EMC Corporation |
| 13530503 | 8874524 | HANDLING COPY ON FIRST WRITE DATA FOR SNAPSHOT PURPOSES | EMC Corporation |
| 13530706 | 9213718 | SYNCHRONIZED FILE MANAGEMENT ACROSS MULTIPLE DISPARATE ENDPOINTS | EMC Corporation |
| 13530763 | 8850516 | VIRTUAL PRIVATE CLOUD THAT PROVIDES ENTERPRISE GRADE FUNCTIONALITY AND COMPLIANCE | EMC Corporation |
| 13531847 | 9092143 | DYNAMIC ASSIGNMENT OF TIME INTERVAL BINS | EMC Corporation |
| 13532132 | | [REDACTED] | EMC Corporation |
| 13532309 | 8752148 | PROCESSORLESS TOKEN FOR PRODUCING A ONE-TIME PASSWORD | EMC Corporation |
| 13532355 | 9112895 | ANOMALY DETECTION SYSTEM FOR ENTERPRISE NETWORK SECURITY | EMC Corporation |
| 13532385 | 9038178 | DETECTION OF MALWARE BEACONING ACTIVITIES | EMC Corporation |
| | | | |
| 13533311 | | [REDACTED] | EMC Corporation |
| 13534042 | | [REDACTED] | EMC Corporation |
| 13534135 | 8700899 | FORWARD-SECURE KEY UNLOCKING FOR CRYPTOGRAPHIC DEVICES | EMC Corporation |
| 13534488 | | [REDACTED] | EMC Corporation |
| 13534694 | 8978150 | DATA RECOVERY SERVICE WITH AUTOMATED IDENTIFICATION AND RESPONSE TO COMPROMISED USER CREDENTIALS | EMC Corporation |
| 13534873 | 9230066 | ASSESSING RISK FOR THIRD-PARTY DATA COLLECTORS | EMC Corporation |
| 13534879 | 9281943 | DEFENDING AGAINST FACTORING BY COLLISION | EMC Corporation |
| 13534906 | 9141633 | SPECIAL MARKERS TO OPTIMIZE ACCESS CONTROL LIST (ACL) DATA FOR DEDUPLICATION | EMC Corporation |
| 13534946 | | [REDACTED] | EMC Corporation |
| 13534956 | 9218388 | DECLARATIVE CLUSTER MANAGEMENT | EMC Corporation |
| 13535003 | | [REDACTED] | EMC Corporation |
| 13535018 | 9176902 | DATA MIGRATION TECHNIQUES | EMC Corporation |
| 13535417 | 8856928 | PROTECTING ELECTRONIC ASSETS USING FALSE PROFILES IN SOCIAL NETWORKS | EMC Corporation |
| 13535529 | 9155194 | MEMORY INTERCONNECT ARRANGEMENT HAVING HIGH DATA TRANSFER SPEED SIGNAL INTEGRITY | EMC Corporation |
| 13535593 | 8747132 | PRINTED CIRCUIT BOARD INJECTOR/EJECTOR MECHANISM | EMC Corporation |
| 13535684 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13535696 | 9020802 | WORLDWIDE DISTRIBUTED ARCHITECTURE MODEL AND MANAGEMENT | EMC Corporation |
| 13535712 | 9280381 | EXECUTION FRAMEWORK FOR A DISTRIBUTED FILE SYSTEM | EMC Corporation |
| 13535731 | | [REDACTED] | EMC Corporation |
| 13535740 | 8775861 | NON-DISRUPTIVE STORAGE DEVICE MIGRATION IN FAILOVER CLUSTER ENVIRONMENT | EMC Corporation |
| 13535744 | 9158843 | ADDRESSING MECHANISM FOR DATA AT WORLD WIDE SCALE | EMC Corporation |
| 13535752 | 8977787 | MANAGEMENT OF PATH OPERATING MODE TRANSITIONS IN MULTIPATHING HOST COMPUTER | EMC Corporation |
| 13535760 | | [REDACTED] | EMC Corporation |
| 13535796 | 9361263 | CO-LOCATED CLOUDS, VERTICALLY INTEGRATED CLOUDS, AND FEDERATED CLOUDS | EMC Corporation |
| 13535808 | | [REDACTED] | EMC Corporation |
| 13535814 | | [REDACTED] | EMC Corporation |
| 13535821 | 9338218 | DISTRIBUTED PLATFORM AS A SERVICE | EMC Corporation |
| 13535834 | 9122878 | SOFTWARE LICENSE MANAGEMENT WITH DRIFTING COMPONENT | EMC Corporation |
| 13535851 | 9229656 | MANAGING SETTINGS AND QUERIES IN HOST-BASED DATA MIGRATION | EMC Corporation |
| 13535862 | 9003432 | EFFICIENT MANAGEMENT OF KERNEL DRIVER PERFORMANCE DATA | EMC Corporation |
| 13535918 | 8972340 | MANAGING PROPERTIES COLLECTION | EMC Corporation |
| 13535951 | | [REDACTED] | EMC Corporation |
| 13535981 | 8966173 | MANAGING ACCESSES TO STORAGE OBJECTS | EMC Corporation |
| 13536099 | 9032399 | MEASUREMENT OF INPUT/OUTPUT SCHEDULING CHARACTERISTICS IN DISTRIBUTED VIRTUAL INFRASTRUCTURE | EMC Corporation |
| 13536191 | 8955066 | KNOWLEDGE BASED AUTHENTICATION USING RECENT USER INTERNET ACTIVITY | EMC Corporation |
| 13536355 | 8904525 | TECHNIQUES FOR DETECTING MALWARE ON A MOBILE DEVICE | EMC Corporation |
| 13536357 | 9268727 | METHOD AND APPARATUS FOR COMMAND ABSTRACTION | EMC Corporation |
| 13536364 | 8826264 | NON-DISRUPTIVE UPGRADE OF APPLICATIONS | EMC Corporation |
| 13536371 | 8782324 | TECHNIQUES FOR MANAGING PLACEMENT OF EXTENTS BASED ON A HISTORY OF ACTIVE EXTENTS | EMC Corporation |
| 13536375 | 8799601 | TECHNIQUES FOR MANAGING DEDUPLICATION BASED ON RECENTLY WRITTEN EXTENTS | EMC Corporation |
| 13536389 | 8954699 | TECHNIQUES FOR IDENTIFYING IO HOT SPOTS USING RANGE-LOCK INFORMATION | EMC Corporation |
| 13536422 | 8862948 | METHOD AND APPARATUS FOR PROVIDING AT RISK INFORMATION IN A CLOUD COMPUTING SYSTEM HAVING REDUNDANCY | EMC Corporation |
| 13536424 | 8832325 | TRANSFER BETWEEN STORAGE DEVICES | EMC Corporation |
| 13536425 | | [REDACTED] | EMC Corporation |
| 13536474 | 8880821 | DETERMINING WHETHER TO MIGRATE FROM A SOURCE STORAGE DEVICE TO A TARGET STORAGE DEVICE | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13536512 | 9298582 | METHOD AND APPARATUS FOR PERFORMANCE DATA TRANSFORMATION IN A CLOUD COMPUTING SYSTEM | EMC Corporation |
| 13536519 | 9189495 | REPLICATION AND RESTORATION | EMC Corporation |
| 13536583 | 9207703 | METHOD AND APPARATUS FOR CLIENT APPLICATION CUSTOMIZATION | EMC Corporation |
| 13536705 | 8918493 | METHODS AND APPARATUS FOR AUTOMATING SERVICE LIFECYCLE MANAGEMENT | EMC Corporation |
| 13536726 | | [REDACTED] | EMC Corporation |
| | | | |
| | | | |
| 13536901 | 9170602 | CALIBRATING A HIGH-SPEED CLOCK SIGNAL GENERATED USING A PROCESSOR INTERNAL TO THE ELECTRONIC AUTHENTICATION DEVICE WITHOUT USING A CRYSTAL OSCILLATOR | EMC Corporation |
| 13537163 | | [REDACTED] | EMC Corporation |
| 13537244 | 8782341 | EMBEDDED ADVISORY FRAMEWORK FOR STORAGE CONFIGURATION MANAGEMENT | EMC Corporation |
| 13537251 | 8910281 | IDENTIFYING MALWARE SOURCES USING PHISHING KIT TEMPLATES | EMC Corporation |
| 13537288 | 8924328 | PREDICTIVE MODELS FOR CONFIGURATION MANAGEMENT OF DATA STORAGE SYSTEMS | EMC Corporation |
| | | | |
| 13537345 | 8959305 | SPACE RECLAMATION WITH VIRTUALLY PROVISIONED DEVICES | EMC Corporation |
| 13537405 | 8972490 | USER DISCOVERY IN SOCIALLY-AWARE DATA STORAGE SYSTEMS | EMC Corporation |
| 13537496 | 8935321 | VIRTUALIZED ENVIRONMENT FOR MANAGING HETEROGENEOUS ENTERPRISE SOFTWARE APPLICATIONS | EMC Corporation |
| 13537539 | 8959650 | VALIDATING ASSOCIATION OF CLIENT DEVICES WITH SESSIONS | EMC Corporation |
| 13537578 | 9075755 | OPTIMIZING DATA LESS WRITES FOR RESTORE OPERATIONS | EMC Corporation |
| 13537594 | 8819803 | VALIDATING ASSOCIATION OF CLIENT DEVICES WITH AUTHENTICATED CLIENTS | EMC Corporation |
| 13537614 | | [REDACTED] | EMC Corporation |
| 13537617 | 8855312 | MOBILE TRUST BROKER | EMC Corporation |
| 13537642 | | [REDACTED] | EMC Corporation |
| 13537682 | | [REDACTED] | EMC Corporation |
| | | | |
| 13537839 | | [REDACTED] | EMC Corporation |
| 13537868 | 9021117 | DYNAMICALLY SELECTABLE TRANSPORT OFR KERNEL DRIVER MANAGEMENT | EMC Corporation |
| 13537889 | 8856257 | SENDING ALERTS FROM CLOUD COMPUTING SYSTEMS | EMC Corporation |
| 13537904 | 9021255 | TECHNIQUES FOR MULTIPLE INDEPENDENT VERIFICATIONS FOR DIGITAL CERTIFICATES | EMC Corporation |
| 13537910 | | [REDACTED] | EMC Corporation |
| | | | |
| 13537958 | 8856923 | SIMILARITY-BASED FRAUD DETECTION IN ADAPTIVE AUTHENTICATION SYSTEMS | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| | | | |
| 13538056 | 8626967 | VIRTUALIZATION OF A STORAGE PROCESSOR FOR PORT FAILOVER | EMC Corporation |
| 13538104 | 9069682 | ACCELERATING FILE SYSTEM RECOVERY BY STORING FILE SYSTEM METADATA ON FAST PERSISTENT STORAGE DURING FILE SYSTEM RECOVERY | EMC Corporation |
| 13538111 | 8949656 | PORT MATCHING FOR DATA STORAGE SYSTEM PORT FAILOVER | EMC Corporation |
| 13538113 | 8904229 | ONLINE RECOVERY OF A FILE SYSTEM EXPERIENCING FAILURE OF REDUNDANT LOGICAL STORAGE STORING A SINGLE POINT OF FAILURE | EMC Corporation |
| 13538120 | 8875267 | ACTIVE LEARNING-BASED FRAUD DETECTION IN ADAPTIVE AUTHENTICATION SYSTEMS | EMC Corporation |
| 13538126 | 8924773 | REDUCING FILE SYSTEM DATA UNAVAILABILITY WINDOW BY ADAPTING HIERARCHICAL RECOVERY FRAMEWORK | EMC Corporation |
| 13538137 | 9223799 | A LIGHTWEIGHT METADATA SHARING PROTOCOL FOR LOCATION TRANSPARENT FILE ACCESS | EMC Corporation |
| 13538199 | 8909980 | COORDINATING PROCESSING FOR REQUEST REDIRECTION | EMC Corporation |
| | | | |
| 13538219 | 9141908 | DYNAMIC INFORMATION ASSEMBLY FOR DESIGNATED PURPOSE BASED ON SUITABILITY REASONING OVER METADATA | EMC Corporation |
| 13538245 | 8688878 | DATA STORAGE SYSTEM MODELING | EMC Corporation |
| 13538360 | 8904047 | CLOUD CAPABLE STORAGE SYSTEM WITH HIGH PERFORMANCE NOSQL KEY-VALUE PAIR OPERATING ENVIRONMENT | EMC Corporation |
| 13538365 | 8873836 | CLUSTER-BASED CLASSIFICATION OF HIGH-RESOLUTION DATA | EMC Corporation |
| 13538370 | | [REDACTED] | EMC Corporation |
| | | | |
| 13538428 | | [REDACTED] | EMC Corporation |
| | | | |
| | | | |
| 13538534 | 8954383 | ANALYZING MAPPING OBJECTS OF FILE SYSTEMS | EMC Corporation |
| 13538541 | | [REDACTED] | EMC Corporation |
| 13538567 | 8782752 | APPARATUS AND METHOD FOR MULTI-PLANE THRESHOLD SECURITY | EMC Corporation |
| 13538754 | 8612382 | RECOVERING FILES IN DATA STORAGE SYSTEMS | EMC Corporation |
| 13538789 | 9223500 | FILE CLONES IN A DISTRIBUTED FILE SYSTEM | EMC Corporation |
| 13538913 | 9305153 | USER AUTHENTICATION | EMC Corporation |
| 13538921 | 8862642 | ENDURANT CACHE | EMC Corporation |
| 13538954 | | [REDACTED] | EMC Corporation |
| 13538964 | 9183218 | METHOD AND SYSTEM TO IMPROVE DEDUPLICATION OF STRUCTURED DATASETS USING HYBRID CHUNKING AND BLOCK HEADER REMOVAL | EMC Corporation |
| 13538965 | 9020903 | RECOVERING DUPLICATE BLOCKS IN FILE SYSTEMS | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| | | | |
| 13538993 | 9104971 | AUTOMATED END-TO-END SALES PROCESS OF STORAGE APPLIANCES OF STORAGE SYSTEMS USING PREDICTIVE MODELING | EMC Corporation |
| 13539005 | | [REDACTED] | EMC Corporation |
| 13539082 | 9058326 | RECOVERY AND FLUSH OF ENDURANT CACHE | EMC Corporation |
| 13539084 | 9003227 | RECOVERING FILE SYSTEM BLOCKS OF FILE SYSTEMS | EMC Corporation |
| 13539392 | 9178880 | GATEWAY MEDIATED MOBILE DEVICE AUTHENTICATION | EMC Corporation |
| 13539396 | 9116811 | SYSTEM AND METHOD FOR CACHE MANAGEMENT | EMC Corporation |
| 13539398 | 9158578 | SYSTEM AND METHOD FOR MIGRATING VIRTUAL MACHINES | EMC Corporation |
| 13539404 | 9047493 | SYSTEM AND METHOD FOR PROTECTING CONTENT | EMC Corporation |
| 13539408 | 9116636 | SYSTEM AND METHOD FOR ADJUSTING QOS | EMC Corporation |
| 13539413 | 8924670 | SYSTEM AND METHOD FOR PROTECTING CONTENT | EMC Corporation |
| 13539419 | 9378096 | SYSTEM AND METHOD FOR CACHE MANAGEMENT | EMC Corporation |
| 13539420 | 9104330 | SYSTEM AND METHOD FOR INTERLEAVING STORAGE | EMC Corporation |
| 13539423 | 9092461 | SYSTEM AND METHOD FOR TIERING DATA STORAGE | EMC Corporation |
| 13539426 | | [REDACTED] | EMC Corporation |
| 13539427 | | [REDACTED] | EMC Corporation |
| 13539430 | 9135176 | SYSTEM AND METHOD FOR THIN PROVISIONING | EMC Corporation |
| 13539431 | 9026741 | SYSTEM AND METHOD FOR WARMING CACHE | EMC Corporation |
| 13539433 | 9152336 | SYSTEM AND METHOD FOR LUN ADJUSTMENT | EMC Corporation |
| 13539434 | | [REDACTED] | EMC Corporation |
| 13539435 | 8671229 | SYSTEM AND METHOD FOR MANAGING IO OPERATIONS | EMC Corporation |
| 13539436 | | [REDACTED] | EMC Corporation |
| 13539437 | | [REDACTED] | EMC Corporation |
| 13539438 | 8930746 | SYSTEM AND METHOD FOR LUN ADJUSTMENT | EMC Corporation |
| 13549079 | 9100330 | INTRODUCTION OF READ DELAY OR WRITE DELAY IN SERVERS OF A GEOGRAPHICALLY DISTRIBUTED DATA PROCESSING SYSTEM SO THAT CLIENTS READ UP-TO-DATE DATA | EMC Corporation |
| 13550481 | | [REDACTED] | EMC Corporation |
| 13556443 | | [REDACTED] | EMC Corporation |
| 13557104 | 8595265 | EFFICIENT STORAGE OF NON-SEARCHABLE ATTRIBUTES | EMC Corporation |
| | | | |
| 13558859 | | [REDACTED] | EMC Corporation |
| 13558889 | 8972405 | STORAGE RESOURCE MANAGEMENT INFORMATION MODELING IN A CLOUD PROCESSING ENVIRONMENT | EMC Corporation |
| 13561340 | 8832498 | SCALABLE CODEBOOK CORRELATION FOR CLOUD SCALE TOPOLOGY | EMC Corporation |

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|---|---|---|---|
| 13566178 | 9037596 | SYSTEM AND METHOD FOR COMMITTING DATA OBJECTS TO BE IMMUTABLE | EMC Corporation |
| 13568909 | 8914328 | BACKUP INFORMATION MANAGEMENT | EMC Corporation |
| 13570827 | | [REDACTED] | EMC Corporation |
| 13570912 | | [REDACTED] | EMC Corporation |
| 13571666 | 8650395 | SELECTIVE SHREDDING IN A DEDUPLICATION SYSTEM | EMC Corporation |
| 13572543 | 8682827 | SMART CONTAINERS | EMC Corporation |
| 13584994 | | [REDACTED] | EMC Corporation |
| 13586137 | 8832713 | EVENT QUEUES | EMC Corporation |
| 13586659 | 8527586 | MULTI-PROTOCOL GLOBAL NAMESPACE MECHANISM FOR NETWORK ATTACHED STORAGE FOR NETWORK ATTACHED STORAGE | EMC Corporation |
| 13591612 | 9152637 | JUST-IN-TIME FORMATTING OF FILE SYSTEM METADATA | EMC Corporation |
| 13595309 | 9330193 | METHOD AND SYSTEM FOR DISPLAYING COMPONENTS IDENTIFIED BY GUIDE | EMC Corporation |
| 13595727 | 8850425 | METHOD AND SYSTEM FOR DISPLAYING CONFIGURATION TEST RESULTS BY LEVERAGED DATA PROTECTION SOFTWARE | EMC Corporation |
| 13596088 | 8720089 | ULTRA-THIN RETRACTABLE LABEL HOLDER FOR RACK-MOUNTED ELECTRICAL CHASSIS | EMC Corporation |
| 13596180 | | [REDACTED] | EMC Corporation |
| 13596227 | 9135120 | CONSISTENCY GROUP MOVING | EMC Corporation |
| 13596570 | | [REDACTED] | EMC Corporation |
| 13597410 | | [REDACTED] | EMC Corporation |
| 13597855 | | [REDACTED] | EMC Corporation |
| 13598030 | | [REDACTED] | EMC Corporation |
| 13598372 | | [REDACTED] | EMC Corporation |
| 13598411 | | [REDACTED] | EMC Corporation |
| 13599235 | | [REDACTED] | EMC Corporation |
| 13599296 | | [REDACTED] | EMC Corporation |
| 13599337 | 8977593 | VIRTUALIZED CG | EMC Corporation |
| 13599460 | | [REDACTED] | EMC Corporation |
| 13599492 | | [REDACTED] | EMC Corporation |
| 13600523 | 8838851 | TECHNIQUES FOR PATH SELECTION | EMC Corporation |
| 13600641 | 9230075 | MULTI-SERVER AUTHENTICATION USING PROACTIVIZATION JOURNALING | EMC Corporation |
| 13601885 | 9189408 | SYSTEM AND METHOD OF OFFLINE ANNOTATION OF FUTURE ACCESSES FOR IMPROVING PERFORMANCE OF BACKUP STORAGE SYSTEM | EMC Corporation |
| | | | |
| 13609398 | | [REDACTED] | EMC Corporation |
| 13610058 | | [REDACTED] | EMC Corporation |
| 13610118 | 9026765 | PERFORMING WRITE OPERATIONS IN A MULTI-TIERED STORAGE ENVIRONMENT | EMC Corporation |
| 13610214 | | [REDACTED] | EMC Corporation |
| 13610474 | 9348569 | METHOD AND SYSTEM FOR A CONFIGURABLE AUTOMATION FRAMEWORK | EMC Corporation |
| 13610611 | 8667239 | ASSISTED MAINFRAME DATA DE-DUPLICATION | EMC Corporation |
| 13611267 | | [REDACTED] | EMC Corporation |
| 13611287 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13611571 | 9078349 | UNIVERSAL FILLER-BEZEL CLIP ASSEMBLY | EMC Corporation |
| 13611868 | | [REDACTED] | EMC Corporation |
| 13611919 | 8949953 | BROKERING MULTIPLE AUTHENTICATIONS THROUGH A SINGLE PROXY | EMC Corporation |
| 13611941 | 9032490 | TECHNIQUES FOR AUTHENTICATING A USER WITH HEIGHTENED SECURITY | EMC Corporation |
| 13612393 | 9128823 | SYNTHETIC INCREMENTAL DATA GENERATION FOR BLOCK-BASED STORAGE | EMC Corporation |
| 13613067 | | [REDACTED] | EMC Corporation |
| 13613387 | 8903853 | FEDERATED SEARCH | EMC Corporation |
| 13613750 | | [REDACTED] | EMC Corporation |
| 13615839 | 8800027 | AUTHENTICATION USING PRIVACY PROTECTED PERSONALLY IDENTIFIABLE INFORMATION | EMC Corporation |
| 13616741 | 8949669 | ERROR DETECTION, CORRECTION AND TRIAGE OF A STORAGE ARRAY ERRORS | EMC Corporation |
| 13616934 | 8874966 | STORAGE DEVICE ERROR SIMULATOR TOOL | EMC Corporation |
| 13616978 | 8825653 | CHARACTERIZING AND MODELING INCREMENTAL CHANGES WITH VIRTUAL SYNTHETIC WORKLOADS | EMC Corporation |
| 13617159 | 8769289 | AUTHENTICATION OF A USER ACCESSING A PROTECTED RESOURCE USING MULTI-CHANNEL PROTOCOL | EMC Corporation |
| 13617182 | 8732688 | UPDATING SYSTEM STATUS | EMC Corporation |
| 13617862 | 9152706 | ANONYMOUS IDENTIFICATION TOKENS | EMC Corporation |
| 13618039 | 9052952 | ADAPTIVE BACKUP MODEL FOR OPTIMIZING BACKUP PERFORMANCE | EMC Corporation |
| 13618209 | 9384051 | ADAPTIVE POLICY GENERATING METHOD AND SYSTEM FOR PERFORMANCE OPTIMIZATION | EMC Corporation |
| 13618492 | | [REDACTED] | EMC Corporation |
| 13618634 | 8713554 | AUTOMATED HOTFIX HANDLING MODEL | EMC Corporation |
| 13620085 | 9152352 | FILEMARK CACHE TO CACHE FILEMARK METADATA FOR VIRTUAL TAPES | EMC Corporation |
| 13620394 | 8935470 | PRUNING A FILEMARK CACHE USED TO CACHE FILEMARK METADATA FOR VIRTUAL TAPES | EMC Corporation |
| 13622475 | 9262188 | VIRTUAL ASSET MANAGEMENT IN DATA CENTER | EMC Corporation |
| 13622543 | 8918372 | CONTENT-AWARE DISTRIBUTED DEDUPLICATING STORAGE SYSTEM BASED ON CONSISTENT HASHING | EMC Corporation |
| 13622553 | 9268784 | CONTENT-AWARE DISTRIBUTED DEDUPLICATING STORAGE SYSTEM BASED ON LOCALITY-SENSITIVE HASHING | EMC Corporation |
| 13623148 | 9009402 | CONTENT ADDRESSABLE STORAGE IN LEGACY SYSTEMS | EMC Corporation |
| 13624013 | 9172584 | METHOD AND SYSTEM FOR HIGH-AVAILABILITY CLUSTER DATA PROTECTION | EMC Corporation |
| 13624098 | 9081691 | TECHNIQUES FOR CACHING DATA USING A VOLATILE MEMORY CACHE AND SOLID STATE DRIVE | EMC Corporation |
| 13624154 | 8751622 | TECHNIQUES FOR AUTOMATED APPLICATION DISCOVERY | EMC Corporation |
| 13625182 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13625204 | 8990168 | EFFICIENT CONFLICT RESOLUTION AMONG STATELESS PROCESSES | EMC Corporation |
| 13625292 | 8977898 | CONCURRENT ACCESS TO DATA DURING REPLAY OF A TRANSACTION LOG | EMC Corporation |
| 13625418 | 9078129 | KNOWLEDGE-BASED AUTHENTICATION FOR RESTRICTING ACCESS TO MOBILE DEVICES | EMC Corporation |
| 13625465 | | [REDACTED] | EMC Corporation |
| 13625480 | 8850609 | CONDITIONAL INTEGRATION OF A SATELLITE DEVICE INTO AN AUTHENTICATION PROCESS INVOLVING A PRIMARY DEVICE | EMC Corporation |
| 13625497 | 8938805 | DETECTION OF TAMPERING WITH SOFTWARE INSTALLED ON A PROCESSING DEVICE | EMC Corporation |
| 13625982 | 8782784 | FRAMEWORK FOR IMPLEMENTING SECURITY INCIDENT AND EVENT MANAGEMENT IN AN ENTERPRISE | EMC Corporation |
| 13625994 | | [REDACTED] | EMC Corporation |
| 13626092 | 8798242 | VOICE-RELATED INFORMATION IN DATA MANAGEMENT SYSTEMS | EMC Corporation |
| 13626167 | | [REDACTED] | EMC Corporation |
| 13626182 | | [REDACTED] | EMC Corporation |
| 13626198 | | [REDACTED] | EMC Corporation |
| | | | |
| 13626240 | | [REDACTED] | EMC Corporation |
| 13626247 | | [REDACTED] | EMC Corporation |
| 13626266 | 8914895 | MANAGING VERIFICATION OF INPUT DATA | EMC Corporation |
| 13626272 | | [REDACTED] | EMC Corporation |
| 13626299 | 9158729 | CLIENT REQUEST PROCESSING USING PROTOCOL ABSTRACTION | EMC Corporation |
| 13626323 | | [REDACTED] | EMC Corporation |
| 13626422 | 8909887 | SELECTIVE DEFRAGMENTATION BASED ON IO HOT SPOTS | EMC Corporation |
| 13626741 | 8620973 | CREATING POINT-IN-TIME COPIES OF FILE MAPS FOR MULTIPLE VERSIONS OF A PRODUCTION FILE TO PRESERVE FILE MAP ALLOCATIONS FOR THE PRODUCTION FILE | EMC Corporation |
| 13626757 | | [REDACTED] | EMC Corporation |
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| | | | |
| 13627189 | 8924647 | DYNAMIC SELECTION OF DATA REPLACEMENT PROTOCOL FOR MULTI-LEVEL CACHE | EMC Corporation |
| 13627195 | 8938477 | SIMULATING DATA STORAGE SYSTEM CONFIGURATION DATA | EMC Corporation |
| 13627224 | 8799655 | MOBILE OFFLINE AUTHENTICATION USING ONE-TIME PASSCODES | EMC Corporation |
| 13627423 | 8977662 | STORING DATA OBJECTS FROM A FLAT NAMESPACE IN A HIERARCHICAL DIRECTORY STRUCTURED FILE SYSTEM | EMC Corporation |
| 13627434 | 9020994 | CLIENT-BASED MIGRATING OF DATA FROM CONTENT-ADDRESSED STORAGE TO FILE-BASED STORAGE | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13627594 | 8621121 | DETECTING BOGUS IOS IN A MULTIPATHING DRIVER | EMC Corporation |
| 13627671 | 9256473 | METHOD AND SYSTEM FOR PROVISIONING A VIRTUAL COMPUTING ENVIRONMENT | EMC Corporation |
| 13628085 | 9047225 | DYNAMIC SELECTION OF DATA REPLACEMENT PROTOCOL FOR CACHE | EMC Corporation |
| 13628259 | 9141505 | ADAPTIVE FAILURE SURVIVABILITY IN A STORAGE SYSTEM | EMC Corporation |
| | | | |
| 13628441 | 8965340 | MOBILE DEVICE IDENTIFICATION BY DEVICE ELEMENT COLLECTION | EMC Corporation |
| 13628479 | 9021478 | PROVISIONING VIRTUAL MACHINES VIA CONTENT-CENTRIC NETWORK | EMC Corporation |
| | | | |
| 13628589 | 9098617 | DATA ANALYTICS LIFECYCLE AUTOMATION | EMC Corporation |
| 13628624 | 8850537 | SELF-TUNING KNOWLEDGE-BASED AUTHENTICATION | EMC Corporation |
| 13628630 | | [REDACTED] | EMC Corporation |
| 13628642 | 9202173 | USING LINK ANALYSIS IN ADVERSARIAL KNOWLEDGE-BASED AUTHENTICATION MODEL | EMC Corporation |
| 13628661 | | [REDACTED] | EMC Corporation |
| 13628706 | 9053000 | METHOD AND APPARATUS FOR EVENT CORRELATION BASED ON CAUSALITY EQUIVALENCE | EMC Corporation |
| 13628732 | 9152775 | QUESTION GENERATION IN KNOWLEDGE-BASED AUTHENTICATION FOR AN ENTERPRISE | EMC Corporation |
| 13628746 | 9240986 | MANAGING SECURITY AND WIRELESS SIGNAL DETECTION | EMC Corporation |
| 13628757 | 8959195 | CLOUD SERVICE LEVEL ATTESTATION | EMC Corporation |
| 13628794 | | [REDACTED] | EMC Corporation |
| 13628816 | | [REDACTED] | EMC Corporation |
| 13628850 | | [REDACTED] | EMC Corporation |
| 13628878 | 8966382 | MANAGING PRODUCTION AND REPLICA COPIES DYNAMICALLY | EMC Corporation |
| 13628918 | 8954381 | DETERMINING DATA MOVEMENTS IN A MULTI-TIERED STORAGE ENVIRONMENT | EMC Corporation |
| 13629017 | 8898507 | METHODS AND APPARATUS FOR DISASTER TOLERANT CLUSTERS OF HYPERVISORS AS A VIRTUALIZED INFRASTRUCTURE SERVICE | EMC Corporation |
| 13629375 | 8862818 | HANDLING PARTIAL STRIPE WRITES IN LOG-STRUCTURED STORAGE SYSTEMS | EMC Corporation |
| 13629573 | 8700578 | SYSTEM AND METHOD FOR DETERMINING PHYSICAL STORAGE SPACE OF A DEDUPLICATED STORAGE SYSTEM | EMC Corporation |
| 13629763 | | [REDACTED] | EMC Corporation |
| 13629771 | 8990905 | PROTECTED RESOURCE ACCESS CONTROL UTILIZING INTERMEDIATE VALUES OF A HASH CHAIN | EMC Corporation |
| 13629794 | 8862645 | MULTI-PATH FILE SYSTEM WITH BLOCK CACHEBETWEEN CLIENT AND STORAGE ARRAY | EMC Corporation |
| 13629805 | 9202304 | PATH PERFORMANCE MINI-CHARTS | EMC Corporation |
| 13629821 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13629826 | | [REDACTED] | EMC Corporation |
| 13629835 | 8972656 | MANAGING ACCESSES TO ACTIVE-ACTIVE MAPPED LOGICAL VOLUMES | EMC Corporation |
| 13629880 | 8972657 | MANAGING ACTIVE-ACTIVE MAPPED LOGICAL VOLUMES | EMC Corporation |
| 13629953 | 8874494 | DYNAMIC SELECTION OF SPARE STORAGE ELEMENT TYPES IN ARRAY | EMC Corporation |
| 13629967 | 8996583 | INTERACTIVE VISUAL DATA MINING FOR INCREASING CLASSIFICATION ACCURACY | EMC Corporation |
| 13630000 | | [REDACTED] | EMC Corporation |
| 13630003 | 8875255 | PREVENTING USER ENUMERATION BY AN AUTHENTICATION SERVER | EMC Corporation |
| | | | |
| 13630010 | 8880488 | EFFICIENT EXTENT-BASED B-TREE INSERTION | EMC Corporation |
| 13630079 | 9047352 | CENTRALIZED SEARCHING IN A DATA STORAGE ENVIRONMENT | EMC Corporation |
| 13630093 | | [REDACTED] | EMC Corporation |
| | | | |
| 13630167 | 9128854 | SYSTEM AND METHOD FOR CACHE MANAGEMENT | EMC Corporation |
| 13630169 | | [REDACTED] | EMC Corporation |
| 13630214 | 8990615 | SYSTEM AND METHOD FOR CACHE MANAGEMENT | EMC Corporation |
| 13630220 | 9286219 | SYSTEM AND METHOD FOR CACHE MANAGEMENT | EMC Corporation |
| 13630229 | | [REDACTED] | EMC Corporation |
| 13630266 | 9244955 | METHODS AND APPARATUS FOR GENERATING A DATABASE LAYOUT | EMC Corporation |
| 13630271 | 9134262 | MULTI-CHANNEL CONTAMINANT MEASUREMENT SYSTEM | EMC Corporation |
| 13630274 | 8862858 | METHOD AND SYSTEM FOR FAST BLOCK STORAGE RECOVERY | EMC Corporation |
| 13630275 | 9305068 | METHODS AND APPARATUS FOR DATABASE VIRTUALIZATION | EMC Corporation |
| 13630335 | 9154296 | SECURE AND ANONYMOUS DISTRIBUTED AUTHENTICATION | EMC Corporation |
| 13630378 | 8918586 | POLICY-BASED STORAGE OF OBJECT FRAGMENTS IN A MULTI-TIERED STORAGE SYSTEM | EMC Corporation |
| 13630388 | 8918844 | DEVICE PRESENCE VALIDATION | EMC Corporation |
| 13630408 | 8935474 | POLICY-BASED STORAGE OF OBJECT FRAGMENTS IN A MULTI-TIERED STORAGE SYSTEM | EMC Corporation |
| 13630420 | | [REDACTED] | EMC Corporation |
| | | | |
| 13630442 | | [REDACTED] | EMC Corporation |
| 13630445 | 8954880 | USER INTERFACE HAVING USER-CUSTOMIZED DEFAULT VALUES | EMC Corporation |
| 13630455 | | [REDACTED] | EMC Corporation |
| 13630495 | 8977814 | INFORMATION LIFECYCLE MANAGEMENT FOR BINDING CONTENT | EMC Corporation |
| | | | |
| 13630574 | 9288077 | CLUSTER FILE SYSTEM WITH SERVER BLOCK CACHE | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13630632 | | [REDACTED] | EMC Corporation |
| 13630635 | 9372793 | SYSTEM AND METHOD FOR PREDICTIVE CACHING | EMC Corporation |
| 13630638 | | [REDACTED] | EMC Corporation |
| 13630678 | | [REDACTED] | EMC Corporation |
| 13630699 | 9135119 | SYSTEM AND METHOD FOR DATA MANAGEMENT | EMC Corporation |
| 13630746 | | [REDACTED] | EMC Corporation |
| | | | |
| 13630849 | 8902043 | MITIGATING CONFORMATIONAL BIAS IN AUTHENTICATION SYSTEMS | EMC Corporation |
| 13630887 | 9043943 | SELF-DESTRUCTING CONTENT | EMC Corporation |
| | | | |
| 13630957 | | [REDACTED] | EMC Corporation |
| | | | |
| 13631014 | 9116888 | CUSTOMER CONTROLLED DATA PRIVACY PROTECTION IN PUBLIC CLOUD | EMC Corporation |
| 13631039 | | [REDACTED] | EMC Corporation |
| 13631047 | 9104995 | SUBJECT AND AUDIENCE ORIENTED INSTANT COLLABORATIVE DEVELOPMENT | EMC Corporation |
| 13631055 | | [REDACTED] | EMC Corporation |
| 13631190 | | [REDACTED] | EMC Corporation |
| 13631214 | | [REDACTED] | EMC Corporation |
| 13631231 | 9201887 | CLUSTER FILE SERVER PROXY SERVER FOR BACKUP AND RECOVERY | EMC Corporation |
| 13631238 | | [REDACTED] | EMC Corporation |
| 13631246 | | [REDACTED] | EMC Corporation |
| 13631298 | | [REDACTED] | EMC Corporation |
| | | | |
| 13631406 | 8856079 | APPLICATION PROGRAMMING INTERFACE FOR EFFICIENT OBJECT INFORMATION GATHERING AND LISTING | EMC Corporation |
| | | | |
| 13631633 | 8943356 | POST BACKUP CATALOGS | EMC Corporation |
| 13631637 | | [REDACTED] | EMC Corporation |
| 13631678 | 8893269 | IMPORT AUTHORITIES FOR BACKUP SYSTEM | EMC Corporation |
| 13631690 | | [REDACTED] | EMC Corporation |
| 13631701 | 9323759 | MULTIPROCESS DIVIDED FILE SYSTEM BACKUP | EMC Corporation |
| 13631723 | 9311330 | METHOD AND SYSTEM FOR PERFORMING FULL BACKUP IN A FAILOVER CLUSTER | EMC Corporation |
| 13631753 | | [REDACTED] | EMC Corporation |
| 13631774 | 9110604 | SYSTEM AND METHOD FOR FULL VIRTUAL MACHINE BACKUP USING STORAGE SYSTEM FUNCTIONALITY | EMC Corporation |
| 13631794 | 9104331 | SYSTEM AND METHOD FOR INCREMENTAL VIRTUAL MACHINE BACKUP USING STORAGE SYSTEM FUNCTIONALITY | EMC Corporation |
| 13631897 | 9009444 | SYSTEM AND METHOD FOR LUN MANAGEMENT | EMC Corporation |
| 13631917 | 8862550 | RELIABLE IN-PLACE BOOTSTRAP METADATA TRANSFORMATION IN A SHARED DATA STORE | EMC Corporation |
| 13632014 | 8850546 | PRIVACY-PRESERVING USER ATTRIBUTE RELEASE AND SESSION MANAGEMENT | EMC Corporation |
| 13632055 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13632063 | 8934378 | RESILIENT CACHE-BASED TOPOLOGY DETECTION OF A DYNAMIC CLUSTER | EMC Corporation |
| 13632095 | | [REDACTED] | EMC Corporation |
| 13632099 | | [REDACTED] | EMC Corporation |
| 13632105 | | [REDACTED] | EMC Corporation |
| 13649659 | 9207881 | SYSTEM AND METHOD FOR OBJECT MANAGEMENT | EMC Corporation |
| 13649902 | 8825667 | METHOD AND APPARATUS FOR MANAGING DATA OBJECTS OF A DATA STORAGE SYSTEM | EMC Corporation |
| 13663535 | 8566916 | AGILE OTP GENERATION | EMC Corporation |
| 13665881 | | [REDACTED] | EMC Corporation |
| 13665884 | | [REDACTED] | EMC Corporation |
| 13665885 | 9235535 | METHOD AND APPARATUS FOR REDUCING OVERHEADS OF PRIMARY STORAGE BY TRANSFERRING MODIFIED DATA IN AN OUT-OF-ORDER MANNER | EMC Corporation |
| 13666871 | 8837480 | DATA REDISTRIBUTION IN DATA REPLICATION SYSTEMS | EMC Corporation |
| 13668814 | 8442200 | ENHANCED SERVICES PROVIDED USING COMMUNICATION REDIRECTION AND PROCESSING | EMC Corporation |
| 13671774 | 9367569 | RECOVERY OF DIRECTORY INFORMATION | EMC Corporation |
| 13675965 | | [REDACTED] | EMC Corporation |
| 13680733 | | [REDACTED] | EMC Corporation |
| 13681517 | 9122688 | NAMING SCHEME FOR DIFFERENT COMPUTER SYSTEMS | EMC Corporation |
| 13681932 | 9311176 | EVALUATING A SET OF STORAGE DEVICES AND PROVIDING RECOMMENDED ACTIVITIES | EMC Corporation |
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| | | | |
| 13684656 | 9323750 | STORAGE ARRAY SNAPSHOTS FOR LOGGED ACCESS REPLICATION IN A CONTINUOUS DATA PROTECTION SYSTEM | EMC Corporation |
| 13684953 | 8990533 | CRASH CONSISTENCY | EMC Corporation |
| 13685639 | | CORRELATIVE MONITORING, ANALYSIS, AND CONTROL OF MULTI-SERVICE, MULTI-NETWORK SYSTEMS | EMC Corporation |
| | | | |
| 13688068 | 8949191 | USING VERSIONING TO BACK UP MULTIPLE VERSIONS OF A STORED OBJECT | EMC Corporation |
| 13690069 | | [REDACTED] | EMC Corporation |
| 13690654 | | [REDACTED] | EMC Corporation |
| 13693605 | 8997096 | SCALABLE AND SECURE HIGH-LEVEL STORAGE ACCESS FOR CLOUD COMPUTING PLATFORMS | EMC Corporation |
| 13706487 | 9275117 | FAST DEPENDENCY MINING USING ACCESS PATTERNS IN A STORAGE SYSTEM | EMC Corporation |
| 13707788 | | [REDACTED] | EMC Corporation |
| 13708322 | 9015476 | A CRYPTOGRAPHIC DEVICE OPERABLE IN A CHALLENGE-RESPONSE MODE | EMC Corporation |
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| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13710111 | 9201739 | METHOD AND SYSTEM FOR A DATABASE MANAGEMENT SYSTEM ADD-IN FOR THIRD PARTY BACKUP AND RESTORE APPLICATIONS | EMC Corporation |
| 13710657 | 9229942 | METHOD AND SYSTEM FOR HARD LINK HANDLING FOR INCREMENTAL FILE MIGRATION | EMC Corporation |
| 13710715 | | [REDACTED] | EMC Corporation |
| 13710893 | 8843448 | METHOD AND SYSTEM FOR RENAMED DIRECTORY HANDLING FOR INCREMENTAL FILE MIGRATION | EMC Corporation |
| 13711859 | 9154480 | CHALLENGE-RESPONSE AUTHENTICATION OF A CRYPTOGRAPHIC DEVICE | EMC Corporation |
| 13711877 | | [REDACTED] | EMC Corporation |
| 13712193 | 9054945 | CONFIGURING STORAGE ACCESS CONTROL | EMC Corporation |
| 13713136 | | [REDACTED] | EMC Corporation |
| 13713658 | 8874904 | VIEW COMPUTATION AND TRANSMISSION FOR A SET OF KEYS REFRESHED OVER MULTIPLE EPOCHS IN A CRYPTOGRAPHIC DEVICE | EMC Corporation |
| 13715222 | 8990453 | ADAPTIVE AND OPTIMIZED FLOW CONTROL MECHANISM | EMC Corporation |
| 13715348 | 8924364 | EFFICIENT MANAGEMENT OF FILE SYSTEM QUOTA TREES | EMC Corporation |
| 13715575 | 8935449 | CUSTOMIZATION OF DATA PROCESSING EQUIPMENT WITH A REMOVABLE STORAGE DEVICE | EMC Corporation |
| 13715659 | 9069482 | METHOD AND SYSTEM FOR DYNAMIC SNAPSHOT BASED BACKUP AND RECOVERY OPERATIONS | EMC Corporation |
| 13715772 | | FILE SYSTEM QUIESCING DRIVER | EMC Corporation |
| 13716305 | 9191386 | AUTHENTICATION USING ONE-TIME PASSCODE AND PREDEFINED SWIPE PATTERN | EMC Corporation |
| 13716327 | 8806627 | CONTENT RANDOMIZATION FOR THWARTING MALICIOUS SOFTWARE ATTACKS | EMC Corporation |
| 13716373 | 9098412 | GUIDED PERFORMANCE TROUBLESHOOTING AND EXPLORATION | EMC Corporation |
| 13716589 | 9176972 | IMPLIED M83 NAMES IN ALTERNATE NAME GENERATION IN DIRECTORIES SUPPORTING MULTIPLE NAMING PROTOCOLS | EMC Corporation |
| 13717004 | | [REDACTED] | EMC Corporation |
| 13717929 | | [REDACTED] | EMC Corporation |
| 13718171 | 8886316 | AUTHENTICATION OF EXTERNAL DEVICES TO IMPLANTABLE MEDICAL DEVICES USING BIOMETRIC MEASUREMENTS | EMC Corporation |
| 13718824 | 9063664 | METHOD AND SYSTEM FOR PROCESSING CHECKSUM OF A DATA STREAM TO OPTIMIZE DEDUPLICATION | EMC Corporation |
| 13718827 | 9087086 | METHOD AND SYSTEM FOR HANDLING OBJECT BOUNDARIES OF A DATA STREAM TO OPTIMIZE DEDUPLICATION | EMC Corporation |
| 13719084 | 8732215 | ENVIRONMENT CLASSIFICATION AND SERVICE ANALYSIS | EMC Corporation |
| 13719547 | 8832813 | VOICE AUTHENTICATION VIA TRUSTED DEVICE | EMC Corporation |
| 13720150 | | [REDACTED] | EMC Corporation |
| 13720294 | | [REDACTED] | EMC Corporation |
| 13720352 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13720404 | 8832790 | FRAUD DETECTION IN ADAPTIVE AUTHENTICATION SYSTEMS | EMC Corporation |
| 13720428 | 8839449 | ASSESSING RISK OF INFORMATION LEAKAGE | EMC Corporation |
| 13720449 | | [REDACTED] | EMC Corporation |
| 13720458 | 9176648 | AUTHORING A VIRTUALIZED DATA CENTER | EMC Corporation |
| 13720473 | | [REDACTED] | EMC Corporation |
| 13720493 | | [REDACTED] | EMC Corporation |
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| 13720814 | 9165001 | MULTI STREAM DEDUPLICATED BACKUP OF COLLABORATION SERVER DATA | EMC Corporation |
| 13721502 | 9348627 | DISTRIBUTED DYNAMIC FEDERATION BETWEEN MULTI-CONNECTED VIRTUAL PLATFORM CLUSTERS | EMC Corporation |
| 13721836 | 8949793 | TEST BED DESIGN FROM CUSTOMER SYSTEM CONFIGURATIONS USING MACHINE LEARNING TECHNIQUES | EMC Corporation |
| 13721844 | 9047299 | RECLAIMING BLOCKS FROM A DIRECTORY | EMC Corporation |
| 13722052 | | [REDACTED] | EMC Corporation |
| 13722347 | 9135300 | EFFICIENT SAMPLING WITH REPLACEMENT | EMC Corporation |
| 13722425 | 9183201 | POLICY BASED OVER SAMPLING WITH REPLACEMENT | EMC Corporation |
| 13722747 | | [REDACTED] | EMC Corporation |
| 13722780 | 9147168 | DECISION TREE REPRESENTATION FOR BIG DATA | EMC Corporation |
| 13722816 | | [REDACTED] | EMC Corporation |
| | | | |
| 13722847 | 9122997 | GENERATING ATTRIBUTE-CLASS-STATISTICS FOR DECISION TREES | EMC Corporation |
| 13722864 | 8996436 | DECISION TREE CLASSIFICATION FOR BIG DATA | EMC Corporation |
| | | | |
| 13723088 | 9110898 | METHOD AND APPARATUS FOR AUTOMATICALLY DETECTING REPLICATION PERFORMANCE DEGRADATION | EMC Corporation |
| 13723110 | | [REDACTED] | EMC Corporation |
| 13723134 | | [REDACTED] | EMC Corporation |
| 13723931 | 9235606 | SIMPLIFIED DATABASE/LOG BACKUP AND RESTORE | EMC Corporation |
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| | | | |
| 13725740 | 9026500 | RESTORING VIRTUAL MACHINE DATA | EMC Corporation |
| 13725845 | | [REDACTED] | EMC Corporation |
| 13725854 | 9237057 | SYSTEM AND METHOD FOR WORKLOAD BALANCING IN A FLEXIBLE MULTI-TIERED RESOURCE POOL | EMC Corporation |
| 13726351 | 8914329 | AUTOMATED TIME-BASED TESTING METHOD FOR DISTRIBUTED SYSTEM | EMC Corporation |
| 13726805 | | [REDACTED] | EMC Corporation |
| 13726912 | 8862541 | N-SITE ASYNCHRONOUS REPLICATION | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13727738 | 9031994 | DATABASE PARTITIONING FOR DATA PROCESSING SYSTEM | EMC Corporation |
| 13727884 | | [REDACTED] | EMC Corporation |
| 13728234 | 9361306 | MANAGING CONCURRENT WRITE OPERATIONS TO A FILE SYSTEM TRANSACTION LOG | EMC Corporation |
| 13728324 | | [REDACTED] | EMC Corporation |
| 13728382 | 8990550 | METHODS AND APPARATUS FOR SECURING COMMUNICATIONS BETWEEN A NODE AND A SERVER BASED ON HARDWARE METADATA GATHERED BY AN IN-MEMORY PROCESS | EMC Corporation |
| 13728387 | | [REDACTED] | EMC Corporation |
| 13728394 | 9262493 | DATA ANALYTICS LIFECYCLE PROCESSES | EMC Corporation |
| 13728421 | 9069594 | BURST BUFFER APPLIANCE COMPRISING MULTIPLE VIRTUAL MACHINES | EMC Corporation |
| 13728483 | | [REDACTED] | EMC Corporation |
| 13728490 | | [REDACTED] | EMC Corporation |
| 13729155 | | [REDACTED] | EMC Corporation |
| 13729249 | | [REDACTED] | EMC Corporation |
| 13729301 | 9361310 | METHOD AND SYSTEM FOR NETWORK USER ACCESS IMPERSONATION FOR MULTI-THREADED BACKUP APPLICATIONS | EMC Corporation |
| 13729361 | 9361327 | ROLLING BLOOM FILTER FOR DATA WITH RETENTION POLICY | EMC Corporation |
| 13729391 | | [REDACTED] | EMC Corporation |
| 13729545 | 8959388 | MANAGING TLU RECOVERY USING PRE-ALLOCATED LUN SLICES | EMC Corporation |
| 13729618 | | [REDACTED] | EMC Corporation |
| 13729644 | 8949483 | TECHNIQUES USING I/O CLASSIFICATIONS IN CONNECTION WITH DETERMINING DATA MOVEMENTS | EMC Corporation |
| 13729680 | 9354813 | DATA STORAGE SYSTEM MODELING | EMC Corporation |
| 13729701 | 8972637 | GOVERNANCE OF STORAGE | EMC Corporation |
| 13729780 | | [REDACTED] | EMC Corporation |
| 13729996 | 8955076 | EVENT-BASED BIOMETRIC AUTHENTICATION USING MOBILE DEVICE | EMC Corporation |
| 13730037 | | [REDACTED] | EMC Corporation |
| 13730086 | 9311333 | MANAGING FILES OF FILE SYSTEMS | EMC Corporation |
| 13730091 | | [REDACTED] | EMC Corporation |
| 13730129 | | [REDACTED] | EMC Corporation |
| 13730261 | | [REDACTED] | EMC Corporation |
| 13730307 | | [REDACTED] | EMC Corporation |
| 13730401 | 8949661 | FEDERATION OF INDICES | EMC Corporation |
| 13730409 | | [REDACTED] | EMC Corporation |
| 13730442 | | [REDACTED] | EMC Corporation |
| 13730451 | 9286177 | S-PARAMETER ANALYSIS TOOL | EMC Corporation |
| 13730464 | | [REDACTED] | EMC Corporation |
| 13730468 | 9043535 | MINIMIZING APPLICATION RESPONSE TIME | EMC Corporation |
| 13730496 | | [REDACTED] | EMC Corporation |
| 13730586 | | [REDACTED] | EMC Corporation |
| 13730635 | | [REDACTED] | EMC Corporation |
| 13730675 | | [REDACTED] | EMC Corporation |
| 13730783 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13731182 | 9020977 | MANAGING MULTIPROTOCOL DIRECTORIES | EMC Corporation |
| 13731197 | 9201802 | MANAGING READ/WRITE LOCKS FOR MULTIPLE CPU CORES FOR EFFICIENT ACCESS TO STORAGE ARRAY RESOURCES | EMC Corporation |
| 13731271 | 9274817 | STORAGE QUALITY-OF-SERVICE CONTROL IN DISTRIBUTED VIRTUAL INFRASTRUCTURE | EMC Corporation |
| 13731274 | 9256700 | PUBLIC SERVICE FOR EMULATION OF APPLICATION LOAD BASED ON SYNTHETIC DATA GENERATION DERIVED FROM PRE-EXISTING MODELS | EMC Corporation |
| 13731279 | 9355112 | OPTIMIZING COMPRESSION BASED ON DATA ACTIVITY | EMC Corporation |
| 13731346 | 8817988 | VARIABLE EPOCH SCHEDULER FOR PROACTIVE CRYPTOGRAPHY SYSTEMS | EMC Corporation |
| 13731367 | 9177127 | CONFOUNDER GENERATION IN KNOWLEDGE-BASED AUTHENTICATION FOR AN ENTERPRISE | EMC Corporation |
| 13731415 | | [REDACTED] | EMC Corporation |
| 13731430 | 9038134 | MANAGING PREDICTIONS IN DATA SECURITY SYSTEMS | EMC Corporation |
| 13731455 | | [REDACTED] | EMC Corporation |
| 13731456 | 9201803 | SYSTEM AND METHOD FOR CACHING DATA | EMC Corporation |
| 13731461 | | [REDACTED] | EMC Corporation |
| 13731514 | 8978159 | METHODS AND APPARATUS FOR MEDIATING ACCESS TO DERIVATIVES OF SENSITIVE DATA | EMC Corporation |
| 13731520 | 9160102 | MAGNETIC, SELF-RETRACTING, AUTO-ALIGNING ELECTRICAL CONNECTOR | EMC Corporation |
| 13731536 | | [REDACTED] | EMC Corporation |
| 13731547 | 9286465 | METHOD AND APPARATUS FOR FEDERATED SINGLE SIGN ON USING AUTHENTICATION BROKER | EMC Corporation |
| 13731635 | 9378361 | ANOMALY SENSOR FRAMEWORK FOR DETECTING ADVANCED PERSISTENT THREAT ATTACKS | EMC Corporation |
| 13731643 | 9124585 | FRAMEWORK FOR MAPPING NETWORK ADDRESSES TO HOSTS IN A ENTERPRISE NETWORK | EMC Corporation |
| 13731654 | | [REDACTED] | EMC Corporation |
| 13731707 | 9250955 | MANAGING TASK APPROVAL | EMC Corporation |
| 13731708 | 9146928 | TECHNIQUES FOR STORING METADATA OF A FILESYSTEM IN PERSISTENT MEMORY | EMC Corporation |
| 13731858 | 8997198 | TECHNIQUES FOR SECURING A CENTRALIZED METADATA DISTRIBUTED FILESYSTEM | EMC Corporation |
| 13731883 | 8909967 | TECHNIQUE FOR SECURE COMPUTATION | EMC Corporation |
| 13731885 | 9152716 | TECHNIQUES FOR VERIFYING SEARCH RESULTS OVER A DISTRIBUTED COLLECTION | EMC Corporation |
| 13732119 | 9047309 | DYNAMIC SNAPSHOT MOUNTING | EMC Corporation |
| 13732188 | | [REDACTED] | EMC Corporation |
| 13736782 | 8930336 | RETRIEVAL OF SEARCHABLE AND NON-SEARCHABLE ATTRIBUTES | EMC Corporation |
| 13737295 | 8843917 | TECHNIQUES FOR PARALLEL DRIVE UPGRADE WHILE MAINTAINING HOST ACCESSIBILITY | EMC Corporation |
| 13741644 | 9015121 | UNIFIED VIRTUAL MACHINE AND DATA STORAGE SNAPSHOTS | EMC Corporation |

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|---|---|---|---|
| 13751307 | 9330048 | BALANCING RESPONSE TIMES FOR SYNCHRONOUS I/O REQUESTS HAVING DIFFERENT PRIORITIES | EMC Corporation |
| 13751611 | | [REDACTED] | EMC Corporation |
| | | | |
| 13753239 | 9021303 | MULTI-THREADED IN-MEMORY PROCESSING OF A TRANSACTION LOG FOR CONCURRENT ACCESS TO DATA DURING LOG REPLAY | EMC Corporation |
| 13753839 | 8984363 | PROOF OF RETRIEVABILITY FOR ARCHIVED FILES | EMC Corporation |
| 13758101 | 8707308 | METHOD FOR DYNAMIC MANAGEMENT OF SYSTEM RESOURCES THROUGH APPLICATION HINTS | EMC Corporation |
| 13762650 | 8756238 | INDEX SEARCHING USING A BLOOM FILTER | EMC Corporation |
| 13763508 | | [REDACTED] | EMC Corporation |
| 13763522 | 9317218 | MEMORY EFFICIENT SANITIZATION OF A DEDUPLICATED STORAGE SYSTEM USING A PERFECT HASH FUNCTION | EMC Corporation |
| 13764358 | 9069785 | STREAM LOCALITY DELTA COMPRESSION | EMC Corporation |
| 13764429 | 8782010 | REPRESENTING DE-DUPLICATED FILE DATA | EMC Corporation |
| 13768163 | 9092508 | OVERSEEING DATA STORAGE EQUIPMENT POWER USAGE VIA LOCAL COLLECTION OF POWER CONSUMPTION DATA AND REMOTE EVALUATION AND REPORTING OF PERFORMANCE | EMC Corporation |
| 13768630 | | [REDACTED] | EMC Corporation |
| 13768679 | | [REDACTED] | EMC Corporation |
| 13770139 | | [REDACTED] | EMC Corporation |
| 13771268 | 9128736 | COMMON SCHEDULING AND SYNCHRONIZATION PRIMITIVES | EMC Corporation |
| 13777226 | 9330150 | REGISTRATION AND UTILIZATION OF ARBITRARY DATA CONVERSION SCHEMES IN A SHARED DATA STORE | EMC Corporation |
| 13778269 | 8966281 | SYSTEMS AND METHODS FOR ACCESSING STORAGE OR NETWORK BASED REPLICAS OF ENCRYPTED VOLUMES WITH NO ADDITIONAL KEY MANAGEMENT | EMC Corporation |
| 13779127 | | [REDACTED] | EMC Corporation |
| 13779177 | | [REDACTED] | EMC Corporation |
| 13781316 | 9185188 | METHOD AND SYSTEM FOR DETERMINING OPTIMAL TIME PERIOD FOR DATA MOVEMENT FROM SOURCE STORAGE TO TARGET STORAGE | EMC Corporation |
| 13781329 | 8909605 | METHOD AND SYSTEM FOR ACCELERATING DATA MOVEMENT USING CHANGE INFORMATION CONCERNING DIFFERENCE BETWEEN CURRENT AND PREVIOUS DATA MOVEMENTS | EMC Corporation |
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| 13783622 | | DECISION PROCEDURE FOR CUSTOMER ISSUE RESOLUTION | EMC Corporation |
| 13784000 | 9081752 | REDUNDANT DISK ENCODING VIA ERASURE DECODING | EMC Corporation |
| 13784060 | | [REDACTED] | EMC Corporation |
| 13784513 | 9361302 | UNIFORM LOGIC REPLICATION FOR DDFS | EMC Corporation |
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| Application Number | Registration Number | Title | Owner |
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| 13785625 | | [REDACTED] | EMC Corporation |
| 13786100 | 9383936 | PERCENT QUOTAS FOR DEDUPLICATION STORAGE APPLIANCE | EMC Corporation |
| 13786270 | 9235475 | METADATA OPTIMIZATION FOR NETWORK REPLICATION USING REPRESENTATIVE OF METADATA BATCH | EMC Corporation |
| 13786277 | 9110964 | METADATA OPTIMIZATION FOR NETWORK REPLICATION USING DIFFERENTIAL ENCODING | EMC Corporation |
| 13790341 | 9330151 | DATABASE CHANGE DATA CAPTURE WITHIN A STORAGE ARRAY | EMC Corporation |
| 13792679 | 9356961 | PRIVACY SCORING FOR CLOUD SERVICES | EMC Corporation |
| 13792992 | | [REDACTED] | EMC Corporation |
| 13793087 | | [REDACTED] | EMC Corporation |
| 13793327 | 9270649 | SECURE SOFTWARE AUTHENTICATOR DATA TRANSFER BETWEEN PROCESSING DEVICES | EMC Corporation |
| 13794029 | 9052969 | PROGRAMMING MODEL FOR TRANSPARENT PARALLELIZATION OF COMBINATORIAL OPTIMIZATION | EMC Corporation |
| 13794198 | | [REDACTED] | EMC Corporation |
| 13794237 | 9218251 | METHOD TO PERFORM DISASTER RECOVERY USING BLOCK DATA MOVEMENT | EMC Corporation |
| 13795061 | 9152578 | SECURING DATA REPLICATION, BACKUP AND MOBILITY IN CLOUD STORAGE | EMC Corporation |
| | | | |
| 13795512 | | [REDACTED] | EMC Corporation |
| 13795801 | 9037858 | DISTRIBUTED CRYPTOGRAPHY USING DISTINCT VALUE SETS EACH COMPRISING AT LEAST ONE OBSCURED SECRET VALUE | EMC Corporation |
| 13798225 | | [REDACTED] | EMC Corporation |
| 13798237 | 8904050 | TECHNIQUES FOR AUTOMATED DATA STORAGE SYSTEM PORT INITIALIZATION | EMC Corporation |
| 13798291 | | [REDACTED] | EMC Corporation |
| 13798395 | 8977830 | CRASH CONSISTENCY | EMC Corporation |
| 13798542 | 8977847 | DISTRIBUTED CHALLENGE-RESPONSE AUTHENTICATION | EMC Corporation |
| 13798545 | 8924595 | MIXED MODE SIMULATION | EMC Corporation |
| 13798552 | 9128628 | DYNAMIC REPLICATION MODE SWITCHING | EMC Corporation |
| | | | |
| 13798988 | | [REDACTED] | EMC Corporation |
| | | | |
| 13799197 | | [REDACTED] | EMC Corporation |
| 13799198 | 8924935 | PREDICTIVE MODEL OF AUTOMATED FIX HANDLING | EMC Corporation |
| 13799224 | 8989513 | IDENTIFYING MARKERS ASSOCIATED WITH IT COMPONENTS IN AN IMAGE | EMC Corporation |
| 13799325 | 9244623 | PARALLEL DE-DUPLICATION OF DATA CHUNKS OF A SHARED DATA OBJECT USING A LOG-STRUCTURED FILE SYSTEM | EMC Corporation |
| 13799339 | 9378046 | MANIPULATING HARDWARE USING A LAYERED DEVICE DRIVER | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
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| 13799388 | | [REDACTED] | EMC Corporation |
| 13799547 | | [REDACTED] | EMC Corporation |
| 13799662 | | [REDACTED] | EMC Corporation |
| 13799696 | | [REDACTED] | EMC Corporation |
| 13799890 | | [REDACTED] | EMC Corporation |
| 13800044 | | [REDACTED] | EMC Corporation |
| 13800534 | 9231956 | UTILIZING ENTITY-GENERIC RECORDS FOR DETERMINING ACCESS TO ASSETS | EMC Corporation |
| 13800708 | | [REDACTED] | EMC Corporation |
| 13800732 | | [REDACTED] | EMC Corporation |
| 13801103 | | [REDACTED] | EMC Corporation |
| 13801178 | | [REDACTED] | EMC Corporation |
| 13801603 | 9083510 | GENERATION AND MANAGEMENT OF CRYPTO KEY FOR CLOUD DATA | EMC Corporation |
| 13803134 | | [REDACTED] | EMC Corporation |
| 13803554 | 9021307 | VERIFYING APPLICATION DATA PROTECTION | EMC Corporation |
| 13803567 | 9130753 | AUTHENTICATION USING SECURITY DEVICE WITH ELECTRONIC INTERFACE | EMC Corporation |
| 13803840 | 9003106 | CRASH CONSISTENCY | EMC Corporation |
| 13803849 | | [REDACTED] | EMC Corporation |
| 13804194 | 9361045 | CONSTRUCTING VIRTUAL STORAGE NETWORKS FOR MULTIPLE TENANTS WITH QUALITY-OF-SERVICE DELIVERY | EMC Corporation |
| 13804327 | 9367351 | PROFILING INPUT/OUTPUT BEHAVIORAL CHARACTERISTICS IN DISTRIBUTED INFRASTRUCTURE | EMC Corporation |
| 13804506 | 9367405 | MANAGING SOFTWARE ERRORS IN STORAGE SYSTEMS | EMC Corporation |
| 13804596 | | [REDACTED] | EMC Corporation |
| 13804703 | | [REDACTED] | EMC Corporation |
| 13804717 | 9092451 | GENOMIC APPLICATION DATA STORAGE | EMC Corporation |
| 13804893 | 9165009 | LIGHTWEIGHT APPLIANCE FOR CONTENT STORAGE | EMC Corporation |
| 13804962 | | [REDACTED] | EMC Corporation |
| 13804996 | | [REDACTED] | EMC Corporation |
| 13813825 | | RETRIEVEING DATA FROM DATA STORAGE SYSTEMS | EMC Corporation |
| 13826966 | | [REDACTED] | EMC Corporation |
| 13827118 | | [REDACTED] | EMC Corporation |
| 13827385 | | [REDACTED] | EMC Corporation |
| 13827452 | | [REDACTED] | EMC Corporation |
| 13827814 | | [REDACTED] | EMC Corporation |
| 13827862 | 8996460 | ACCESSING AN IMAGE IN A CONTINUOUS DATA PROTECTION USING DEDUPLICATION-BASED STORAGE | EMC Corporation |
| 13827909 | 9383937 | JOURNAL TIERING IN A CONTINUOUS DATA PROTECTION SYSTEM USING DEDUPLICATION-BASED STORAGE | EMC Corporation |
| 13827959 | 9110914 | CONTINUOUS DATA PROTECTION USING DEDUPLICATION-BASED STORAGE | EMC Corporation |
| 13827998 | 9325595 | METHOD AND APPARATUS FOR IDENTIFYING AVAILABLE WORK | EMC Corporation |

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|---|---|---|---|
| 13828079 | | [REDACTED] | EMC Corporation |
| 13828185 | 9195672 | SELECTIVE FRAGMENTATION REPAIR | EMC Corporation |
| 13828266 | | [REDACTED] | EMC Corporation |
| 13828294 | | [REDACTED] | EMC Corporation |
| 13828322 | 9286007 | UNIFIED DATAPATH ARCHITECTURE | EMC Corporation |
| 13829037 | 9119069 | NEAR FIELD COMMUNICATION BASED AUTHENTICATION | EMC Corporation |
| 13829293 | | [REDACTED] | EMC Corporation |
| 13829374 | 9049185 | AUTHENTICATED HIERARCHICAL SET OPERATIONS AND APPLICATIONS | EMC Corporation |
| 13830138 | | [REDACTED] | EMC Corporation |
| 13830184 | 9235582 | TRACKING FILES EXCLUDED FROM BACKUP | EMC Corporation |
| 13830421 | | [REDACTED] | EMC Corporation |
| 13832280 | 9331916 | DATA-DRIVEN DETECTION OF SERVERS AND CLIENTS | EMC Corporation |
| 13832331 | | [REDACTED] | EMC Corporation |
| 13832362 | 9049596 | PREVENTION OF FRAUD IN MOBILE SIM REISSUING VIA KNOWLEDGE BASED AUTHENTICATION | EMC Corporation |
| 13832412 | | [REDACTED] | EMC Corporation |
| 13832468 | | [REDACTED] | EMC Corporation |
| 13832636 | 9176681 | MANAGING PROVISIONING OF STORAGE IN STORAGE SYSTEMS | EMC Corporation |
| 13832695 | 9122689 | RECOVERING PERFORMANCE OF A FILE SYSTEM POST-MIGRATION | EMC Corporation |
| 13832705 | 9146921 | ACCESSING A FILE SYSTEM DURING A FILE SYSTEM CHECK | EMC Corporation |
| 13832784 | | [REDACTED] | EMC Corporation |
| 13833280 | | [REDACTED] | EMC Corporation |
| 13833356 | | [REDACTED] | EMC Corporation |
| | | | |
| 13833517 | 8930687 | SECURE DISTRIBUTED DEDUPLICATION IN ENCRYPTED DATA STORAGE | EMC Corporation |
| 13833692 | 8856400 | I/O PERFORMANCE QUOTAS | EMC Corporation |
| 13834033 | 9195400 | SNAPSHOT DATA MANAGEMENT FOR MODELING AND MIGRATION PLANNING OF DATA STORAGE SYSTEMS | EMC Corporation |
| 13834360 | 9280467 | METADATA FLUSHING USING ADDITIVE INCREASE AND MULTIPLICITIVE DECREASE TO DETERMINE A NUMBER OF IO PROCESSES USED | EMC Corporation |
| 13834385 | 9229864 | MANAGING METADATA SYNCHRONIZATION FOR REDUCING HOST SYSTEM LATENCY IN A STORAGE SYSTEM | EMC Corporation |
| 13834465 | | [REDACTED] | EMC Corporation |
| 13834695 | | [REDACTED] | EMC Corporation |
| 13835929 | 9081842 | SYNCHRONOUS AND ASYMMETRIC ASYNCHRONOUS ACTIVE-ACTIVE-ACTIVE DATA ACCESS | EMC Corporation |
| 13835946 | | [REDACTED] | EMC Corporation |
| 13835999 | 9244997 | ASYMMETRIC ACTIVE-ACTIVE ACCESS OF ASYNCHRONOUSLY-PROTECTED DATA STORAGE | EMC Corporation |
| 13836008 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13836095 | 9152339 | SYNCHRONIZATION OF ASYMMETRIC ACTIVE-ACTIVE, ASYNCHRONOUSLY-PROTECTED STORAGE | EMC Corporation |
| 13836185 | | [REDACTED] | EMC Corporation |
| 13837053 | | [REDACTED] | EMC Corporation |
| 13837086 | 9304999 | VIRTUAL STORAGE PROCESSOR LOAD BALANCING | EMC Corporation |
| | | | |
| | | | |
| 13837675 | 9225700 | PROXIMITY-BASED AUTHENTICATION | EMC Corporation |
| 13837707 | 9201573 | ADAPTIVE GUI PRE-FETCHING | EMC Corporation |
| 13837751 | 9262424 | TECHNIQUES FOR PERFORMING SLICE CONSISTENCY CHECKS | EMC Corporation |
| 13837825 | | [REDACTED] | EMC Corporation |
| 13837869 | 8996837 | PROVIDING MULTI-TENANCY WITHIN A DATA STORAGE APPARATUS | EMC Corporation |
| 13838498 | 9092290 | PERFORMING A NON-DISRUPTIVE SOFTWARE UPGRADE ON PHYSICAL STORAGE PROCESSORS HAVING ACCESS TO VIRTUAL STORAGE PROCESSORS | EMC Corporation |
| 13838540 | | [REDACTED] | EMC Corporation |
| 13838749 | | [REDACTED] | EMC Corporation |
| 13838948 | 9075583 | LAYOUT DESIGN FOR A MOBILE APPLICATION USING GOVERNANCE, RISK MANAGEMENT AND COMPLIANCE RULES | EMC Corporation |
| 13838955 | | [REDACTED] | EMC Corporation |
| 13839171 | 9171042 | PARALLEL PROCESSING DATABASE TREE STRUCTURE | EMC Corporation |
| 13839390 | | [REDACTED] | EMC Corporation |
| 13839872 | | [REDACTED] | EMC Corporation |
| 13840274 | 8972465 | BURST BUFFER APPLIANCE WITH SMALL FILE AGGREGATION | EMC Corporation |
| 13840420 | | [REDACTED] | EMC Corporation |
| 13840654 | 9032212 | SELF-REFRESHING DISTRIBUTED CRYPTOGRAPHY | EMC Corporation |
| 13840912 | | DATA ANALYTICS PLATFORM OVER PARALLEL DATABASES AND DISTRIBUTED FILE SYSTEMS | EMC Corporation |
| 13840948 | | [REDACTED] | EMC Corporation |
| 13841234 | 9323760 | INTELLIGENT SNAPSHOT BASED BACKUPS | EMC Corporation |
| 13842710 | 9355104 | INTELLIGENT PAIRING USING A LOOKUP DATABASE FOR SNAPSHOT BASED BACKUPS | EMC Corporation |
| 13842816 | | [REDACTED] | EMC Corporation |
| 13842955 | | [REDACTED] | EMC Corporation |
| 13843067 | 9378224 | ATHERECTOMY CATHETER WITH ALIGNED IMAGER | EMC Corporation |
| 13843109 | 9164691 | INTELLIGENT CONFIGURATION FOR SNAPSHOT BASED BACKUPS | EMC Corporation |
| | | | |
| 13850727 | 8762583 | APPLICATION AWARE INTELLIGENT STORAGE SYSTEM | EMC Corporation |
| 13852187 | | [REDACTED] | EMC Corporation |
| | | | |
| 13853060 | | [REDACTED] | EMC Corporation |

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| 13853207 | 9071424 | TOKEN-BASED KEY GENERATION | EMC Corporation |
| 13853279 | 8978122 | SECURE CROSS-TENANCY FEDERATION IN SOFTWARE-AS-A-SERVICE SYSTEM | EMC Corporation |
| 13853284 | 9122697 | UNIFIED DATA SERVICES FOR BLOCK AND FILE OBJECTS | EMC Corporation |
| 13853291 | 8977896 | MAINTAINING DATA INTEGRITY IN DATA MIGRATION OPERATIONS USING PER-MIGRATION DEVICE ERROR FLAGS | EMC Corporation |
| 13853438 | | [REDACTED] | EMC Corporation |
| 13853479 | | [REDACTED] | EMC Corporation |
| 13853508 | 9280555 | UNIFIED DATA PROTECTION FOR BLOCK AND FILE OBJECTS | EMC Corporation |
| 13853519 | | [REDACTED] | EMC Corporation |
| 13853653 | 9306943 | ACCESS POINT AUTHENTICATION SERVER COMBINATION | EMC Corporation |
| 13853803 | | [REDACTED] | EMC Corporation |
| 13853817 | | [REDACTED] | EMC Corporation |
| 13853827 | | [REDACTED] | EMC Corporation |
| 13854114 | | [REDACTED] | EMC Corporation |
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| 13857396 | 9081704 | TECHNIQUES FOR NON-DISRUPTIVE UPGRADE | EMC Corporation |
| 13857454 | 9282053 | TECHNIQUES FOR DYNAMIC RESOURCE PARTITIONING | EMC Corporation |
| 13857548 | 9323682 | NON-INTRUSIVE AUTOMATED STORAGE TIERING USING INFORMATION OF FRONT END STORAGE ACTIVITIES | EMC Corporation |
| 13860397 | 8832491 | POST ACCESS DATA PRESERVATION | EMC Corporation |
| 13860405 | 8724788 | ENHANCED SERVICES PROVIDED USING COMMUNICATION REDIRECTION AND PROCESSING | EMC Corporation |
| 13862032 | 8880824 | GLOBAL DE-DUPLICATION IN SHARED ARCHITECTURES | EMC Corporation |
| 13863268 | 9361321 | BACKEND CAPACITY REPORT FOR DE-DUPLICATED STORAGE SYSTEMS | EMC Corporation |
| | | | |
| 13865931 | 8880469 | PERFORMANCE IMPROVEMENT OF A CAPACITY OPTIMIZED STORAGE SYSTEM USING A PERFORMANCE SEGMENT STORAGE SYSTEM INCLUDING A DETERMINER | EMC Corporation |
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| 13870262 | | [REDACTED] | EMC Corporation |
| 13870328 | | [REDACTED] | EMC Corporation |
| 13872660 | 8904063 | ORDERED KERNEL QUEUE FOR MULTIPATHING EVENTS | EMC Corporation |
| 13873365 | 9203616 | MULTI-SERVER FAULT TOLERANT DATA STORE UPDATE | EMC Corporation |
| 13873518 | 9092159 | OBJECT CLASSIFICATION AND IDENTIFICATION FROM RAW DATA | EMC Corporation |
| 13874796 | 8706967 | CACHE MANAGEMENT SYSTEM AND METHOD | EMC Corporation |

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| 13875490 | 9235516 | TECHNIQUES USING CACHELESS READ AND DEFERRED CACHING | EMC Corporation |
| 13886644 | | [REDACTED] | EMC Corporation |
| 13886687 | | [REDACTED] | EMC Corporation |
| 13886763 | | [REDACTED] | EMC Corporation |
| 13886786 | | [REDACTED] | EMC Corporation |
| 13886892 | 9223517 | SCALABLE INDEX STORE | EMC Corporation |
| 13886897 | 9128627 | METHOD AND SYSTEM FOR VIRTUAL MACHINE BACKUP | EMC Corporation |
| 13886915 | | [REDACTED] | EMC Corporation |
| 13889196 | | [REDACTED] | EMC Corporation |
| 13889805 | 9122866 | USER AUTHENTICATION | EMC Corporation |
| 13889934 | 9047295 | FILE SYSTEM QUIESCING | EMC Corporation |
| 13891789 | 9063842 | TECHNIQUE FOR INTEGRATING VTL TAPE POOLS WITH MTREE QUOTAS | EMC Corporation |
| 13891802 | 9009742 | VTL ADAPTIVE COMMIT | EMC Corporation |
| 13891808 | 9110599 | THIN PROVISIONING OF VTL TAPE POOLS WITH MTREE LOGICAL QUOTAS | EMC Corporation |
| | | | |
| 13900150 | 9160526 | SHARING ENCRYPTION-RELATED METADATA BETWEEN MULTIPLE LAYERS IN A STORAGE I/O STACK | EMC Corporation |
| 13901648 | 9002904 | HANDLING HIBERNATION OF A PROCESS ON A STORAGE DEVICE | EMC Corporation |
| 13903390 | | [REDACTED] | EMC Corporation |
| 13904353 | | [REDACTED] | EMC Corporation |
| 13904368 | | [REDACTED] | EMC Corporation |
| 13905310 | 9336166 | BURST BUFFER APPLIANCE WITH OPERATING SYSTEM BYPASS FUNCTIONALITY TO FACILITATE REMOTE DIRECT MEMORY ACCESS | EMC Corporation |
| 13905486 | | [REDACTED] | EMC Corporation |
| 13905600 | 9043890 | DISTRIBUTED AUTHENTICATION AGAINST STORED USER IDENTIFIERS AND USER TEMPLATES VIA PSEUDONYM ASSOCIATION | EMC Corporation |
| 13905679 | | [REDACTED] | EMC Corporation |
| 13905716 | | [REDACTED] | EMC Corporation |
| 13905746 | | [REDACTED] | EMC Corporation |
| 13905806 | | [REDACTED] | EMC Corporation |
| 13906200 | 9195826 | A GRAPH-BASED METHOD TO DETECT MALWARE COMMAND-AND-CONTROL INFRASTRUCTURE | EMC Corporation |
| 13907315 | 8918562 | HARDWARE METHOD FOR DETECTING TIMEOUT CONDITIONS IN A LARGE NUMBER OF DATA CONNECTIONS | EMC Corporation |
| 13907760 | | [REDACTED] | EMC Corporation |
| 13908083 | | [REDACTED] | EMC Corporation |
| 13909871 | | [REDACTED] | EMC Corporation |
| 13909875 | 9367448 | METHOD AND SYSTEM FOR DETERMINING DATA INTEGRITY FOR GARBAGE COLLECTION OF DATA STORAGE SYSTEMS | EMC Corporation |
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| Application Number | Registration Number | Title | Owner |
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| 13911455 | 9013732 | USING FONT INFORMATION INSTALLED IN AN OPERATING SYSTEM TO INTERCEPT TEXT BEING PRINTED | EMC Corporation |
| 13912955 | | [REDACTED] | EMC Corporation |
| 13914836 | | [REDACTED] | EMC Corporation |
| 13914989 | 9165019 | SELF RECOVERY | EMC Corporation |
| 13915799 | | [REDACTED] | EMC Corporation |
| 13916859 | | [REDACTED] | EMC Corporation |
| 13917112 | 9379894 | AUTHENTICATION USING CRYPTOGRAPHIC VALUE DERIVED FROM A SHARED SECRET OF A NEAR FIELD COMMUNICATION TAG | EMC Corporation |
| 13917999 | | [REDACTED] | EMC Corporation |
| 13919346 | 9038175 | PROVIDING AN AUTOMATIC ELECTRONIC FRAUD NETWORK DATA QUALITY FEEDBACK LOOP | EMC Corporation |
| 13920387 | | [REDACTED] | EMC Corporation |
| 13920700 | | [REDACTED] | EMC Corporation |
| | | | |
| 13921457 | | [REDACTED] | EMC Corporation |
| 13922325 | | [REDACTED] | EMC Corporation |
| 13923234 | 9043814 | DISPATCHER FRAMEWORK TO PROVIDE INTER-APPLICATION COMMUNICATION | EMC Corporation |
| 13923242 | 8977891 | OPTIMIZED RECOVERY | EMC Corporation |
| 13923427 | | [REDACTED] | EMC Corporation |
| 13923442 | 9158735 | TECHNIQUES FOR GENERATING UNIQUE IDENTIFIERS | EMC Corporation |
| 13923563 | | [REDACTED] | EMC Corporation |
| 13923673 | | [REDACTED] | EMC Corporation |
| 13923764 | | [REDACTED] | EMC Corporation |
| 13923791 | | [REDACTED] | EMC Corporation |
| 13923831 | | [REDACTED] | EMC Corporation |
| 13923854 | | [REDACTED] | EMC Corporation |
| 13924022 | 9171009 | CLUSTER FILE SYSTEM COMPRISING STORAGE SERVER UNITS EACH HAVING A SCALE-OUT NETWORK ATTACHED STORAGE CLUSTER | EMC Corporation |
| 13924348 | | [REDACTED] | EMC Corporation |
| 13924772 | 9268647 | BLOCK BASED INCREMENTAL BACKUP FROM USER MODE | EMC Corporation |
| 13924777 | 9171002 | FILE BASED INCREMENTAL BLOCK BACKUP FROM USER MODE | EMC Corporation |
| 13925003 | | [REDACTED] | EMC Corporation |
| 13925143 | 9189387 | COMBINED MEMORY AND STORAGE TIERING | EMC Corporation |
| 13925216 | 9026694 | TECHNIQUES FOR WORKLOAD REDISTRIBUTION | EMC Corporation |
| 13925289 | 9305161 | PASSWORD HARDENING SYSTEM USING PASSWORD SHARES DISTRIBUTED ACROSS MULTIPLE SERVERS | EMC Corporation |
| 13925518 | | [REDACTED] | EMC Corporation |
| 13925985 | 9178834 | INTERCONNECT FLOW CONTROL | EMC Corporation |
| 13926094 | 9128629 | THROTTLING TECHNIQUES FOR USE WITH DATA RELOCATION | EMC Corporation |
| 13926130 | | [REDACTED] | EMC Corporation |
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| Application Number | Registration Number | Title | Owner |
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| 13926899 | | [REDACTED] | EMC Corporation |
| 13927187 | 9367573 | METHODS AND APPARATUS FOR ARCHIVING SYSTEM HAVING ENHANCED PROCESSING EFFICIENCY | EMC Corporation |
| 13927341 | 9262217 | COMPUTATION RESOURCE CYCLIC UTILIZATION | EMC Corporation |
| 13927492 | 8838840 | METHOD AND APPARATUS FOR RECOVERING FROM SLOW OR STUCK SCSI COMMANDS AT A SCSI TARGET | EMC Corporation |
| 13927528 | 9235450 | METHOD AND APPARATUS FOR REDUCING SLOW OR STUCK SCSI COMMANDS IN A MULTI-SERVICE ENVIRONMENT AT A SCSI TARGET | EMC Corporation |
| 13927681 | 9128855 | FLASH CACHE PARTITIONING | EMC Corporation |
| | | | |
| 13928610 | | [REDACTED] | EMC Corporation |
| 13928706 | | [REDACTED] | EMC Corporation |
| 13928784 | 9124570 | PROVIDING AN ASSESSMENT OF AUTHENTICATION REQUESTS | EMC Corporation |
| 13928810 | 9235802 | AUTOMATED DEFECT AND OPTIMIZATION DISCOVERY | EMC Corporation |
| 13928880 | 9210147 | PROVIDING AN ASSESSMENT OF AUTHENTICATION REQUESTS | EMC Corporation |
| 13928907 | | [REDACTED] | EMC Corporation |
| 13928937 | 9202167 | AUTOMATED DEFECT IDENTIFICATION AND RESOLUTION | EMC Corporation |
| 13928966 | | [REDACTED] | EMC Corporation |
| 13928972 | | [REDACTED] | EMC Corporation |
| 13928976 | | [REDACTED] | EMC Corporation |
| 13928985 | | [REDACTED] | EMC Corporation |
| 13929019 | | [REDACTED] | EMC Corporation |
| 13929027 | 9304699 | MANAGING TOKEN STATES ACROSS MULTIPLE STORAGE PROCESSORS OF A DATA STORAGE ARRAY | EMC Corporation |
| 13929038 | 9380114 | TECHNIQUES FOR PEER MESSAGING ACROSS MULTIPLE STORAGE PROCESSORS OF A DATA STORAGE ARRAY | EMC Corporation |
| 13929070 | 9244632 | DATA STORAGE SYSTEM CONFIGURATION | EMC Corporation |
| 13929516 | | [REDACTED] | EMC Corporation |
| 13929558 | | [REDACTED] | EMC Corporation |
| 13929580 | | [REDACTED] | EMC Corporation |
| 13929621 | 9384151 | UNIFIED SCSI TARGET MANAGEMENT FOR MANAGING A CRASHED SERVICE DAEMON IN A DEDUPLICATION APPLIANCE | EMC Corporation |
| 13929626 | 9378180 | UNIFIED SCSI TARGET MANAGEMENT FOR STARTING AND CONFIGURING A SERVICE DAEMON IN A DEDUPLICATION APPLIANCE | EMC Corporation |
| 13929632 | 9378160 | UNIFIED SCSI TARGET MANAGEMENT FOR SHUTTING DOWN AND DE-CONFIGURING A SERVICE DAEMON IN A DEDUPLICATION APPLIANCE | EMC Corporation |

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| 13929639 | 9390034 | UNIFIED SCSI TARGET MANAGEMENT FOR PERFORMING A DELAYED SHUTTDOWN OF A SERVICE DAEMON IN A DEDUPLICATION APPLIANCE | EMC Corporation |
| 13929664 | | [REDACTED] | EMC Corporation |
| 13929755 | | [REDACTED] | EMC Corporation |
| 13929879 | | [REDACTED] | EMC Corporation |
| 13929887 | | [REDACTED] | EMC Corporation |
| 13929892 | | [REDACTED] | EMC Corporation |
| 13929999 | | [REDACTED] | EMC Corporation |
| 13930010 | | [REDACTED] | EMC Corporation |
| 13930104 | | METHOD AND SYSTEM FOR MANAGING VIRTUAL MACHINE DISKS | EMC Corporation |
| 13930164 | 9122589 | DATA STORAGE SYSTEM WITH UNIFIED SYSTEM CACHE | EMC Corporation |
| 13930214 | 9280423 | MOUNTING BLOCK LEVEL BACKUP IMAGES | EMC Corporation |
| 13930286 | | [REDACTED] | EMC Corporation |
| 13930373 | 8850455 | METHOD AND SYSTEM FOR PARENT BACKUP APPLICATION MONITORING OF CHILDREN BACKUP APPLICATIONS | EMC Corporation |
| 13930506 | 9355121 | SEGREGATING DATA AND METADATA IN A FILE SYSTEM | EMC Corporation |
| 13930684 | 9122712 | COMPRESSING CONTAINER FILES | EMC Corporation |
| 13930819 | | [REDACTED] | EMC Corporation |
| 13930820 | | [REDACTED] | EMC Corporation |
| 13930884 | | [REDACTED] | EMC Corporation |
| 13930896 | | [REDACTED] | EMC Corporation |
| 13930977 | | [REDACTED] | EMC Corporation |
| 13931044 | | [REDACTED] | EMC Corporation |
| 13931083 | 8984602 | PROTECTED RESOURCE ACCESS CONTROL UTILIZING CREDENTIALS BASED ON MESSAGE AUTHENTICATION CODES AND HASH CHAIN VALUES | EMC Corporation |
| 13931095 | | [REDACTED] | EMC Corporation |
| 13931164 | 9330029 | MULTIPLE CONNECTOR IO BOARD | EMC Corporation |
| 13931200 | | [REDACTED] | EMC Corporation |
| 13931212 | | [REDACTED] | EMC Corporation |
| 13931259 | | [REDACTED] | EMC Corporation |
| 13931422 | | [REDACTED] | EMC Corporation |
| 13931458 | | [REDACTED] | EMC Corporation |
| 13931501 | | [REDACTED] | EMC Corporation |
| 13931609 | | [REDACTED] | EMC Corporation |
| 13931757 | 9256603 | FILE SYSTEM OVER FULLY PROVISIONED VOLUME FILE IN DIRECT MODE | EMC Corporation |
| 13931764 | 9256614 | FILE SYSTEM SNAPSHOTS OVER FULLY PROVISIONED VOLUME FILE IN DIRECT MODE | EMC Corporation |
| 13931769 | 9329803 | FILE SYSTEM OVER THINLY PROVISIONED VOLUME FILE IN MAPPED MODE | EMC Corporation |
| 13931772 | | [REDACTED] | EMC Corporation |
| 13931775 | 9256629 | FILE SYSTEM SNAPSHOTS OVER THINLY PROVISIONED VOLUME FILE IN MAPPED MODE | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13931876 | 9324036 | FRAMEWORK FOR CALCULATING GROUPED OPTIMIZATION ALGORITHMS WITHIN A DISTRIBUTED DATA STORE | EMC Corporation |
| 13931879 | 9235813 | A GENERAL FRAMEWORK FOR CROSS-VALIDATION OF MACHINE LEARNING ALGORITHMS USING SQL ON DISTRIBUTED SYSTEMS | EMC Corporation |
| 13931940 | 9244869 | ASYNCHRONOUS CHECKPOINTING WITH MESSAGE PASSING TO BURST BUFFERS | EMC Corporation |
| 13931959 | | [REDACTED] | EMC Corporation |
| 13931979 | 9280578 | COMBINING TRANSACTIONS IN A METADATA TRANSACTION LOG | EMC Corporation |
| 13931985 | | LOSSLESS COMPRESSION OF FRAGMENTED IMAGE DATA | EMC Corporation |
| 13931989 | | LOSSLESS COMPRESSION OF FRAGMENTED IMAGE DATA | EMC Corporation |
| 13931990 | 9384218 | FORMAT IDENTIFICATION FOR FRAGMENTED IMAGE DATA | EMC Corporation |
| 13931991 | | FORMAT IDENTIFICATION FOR FRAGMENTED IMAGE DATA | EMC Corporation |
| 13931993 | | FORMAT IDENTIFICATION FOR FRAGMENTED IMAGE DATA | EMC Corporation |
| 13932525 | 9137096 | POLICY BASED NETWORK COMPLIANCE | EMC Corporation |
| 13932668 | 9304581 | PROGRAMMABLE AVAILABILITY FOR A HIGH AVAILABILITY STORAGE SYSTEM | EMC Corporation |
| 13937566 | 8892507 | PROVIDING FILE SYSTEM QUOTA SUPPORT FOR A FILE SYSTEM HAVING SEPARATED DATA AND METADATA | EMC Corporation |
| 13947272 | 9002965 | DISTRIBUTION OF MESSAGES IN NODES CONNECTED BY A GRID ARCHITECTURE | EMC Corporation |
| 13956010 | 9208166 | SEEDING REPLICATION | EMC Corporation |
| 13956091 | 9189623 | HISTORICAL BEHAVIOR BASELINE MODELING AND ANOMALY DETECTION IN MACHINE GENERATED END TO END EVENT LOG | EMC Corporation |
| 13956217 | 9110910 | COMMON BACKUP FORMAT AND LOG BASED VIRTUAL CONSTRUCTION | EMC Corporation |
| 13956237 | | [REDACTED] | EMC Corporation |
| 13957318 | | [REDACTED] | EMC Corporation |
| 13959450 | 9348797 | EFFICIENT COMPUTATION OF SKETCHES | EMC Corporation |
| 13962449 | 9069481 | AUTOMATED NON-DISRUPTIVE DATA ENCAPSULATION AND DE-ENCAPSULATION | EMC Corporation |
| 13966009 | | [REDACTED] | EMC Corporation |
| 13966065 | 9152545 | READ-WRITE ACCESS IN A READ-ONLY ENVIRONMENT | EMC Corporation |
| 13966163 | 9152342 | READ-WRITE ACCESS IN A READ-ONLY ENVIRONMENT | EMC Corporation |
| | | | |
| 13969191 | 8935497 | DE-DUPLICATION IN A VIRTUALIZED STORAGE ENVIRONMENT | EMC Corporation |
| 13971740 | 9213494 | DE-DUPLICATION IN A VIRTUALIZED STORAGE ENVIRONMENT | EMC Corporation |
| 13972089 | 8819212 | DELEGATION OF DATA CLASSIFICATION USING COMMON LANGUAGE | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13975709 | | [REDACTED] | EMC Corporation |
| 13978623 | 9141305 | STORAGE RESOURCE USAGE ANALYSIS FOR CUSTOMIZED APPLICATION OPTIONS | EMC Corporation |
| 13983589 | 9153122 | ENVIRONMENTAL ALERT FOR COMPUTER SYSTEMS | EMC Corporation |
| 14/036498 | 9160744 | INCREASING ENTROPY FOR PASSWORD AND KEY GENERATION ON A MOBILE DEVICE | EMC Corporation |
| 14/037626 | 9208162 | GENERATING A SHORT HASH HANDLE | EMC Corporation |
| 14/039242 | 9177160 | KEY MANAGEMENT IN FULL DISK AND FILE-LEVEL ENCRYPTION | EMC Corporation |
| 14/039267 | 9177123 | DETECTING ILLEGITIMATE CODE GENERATORS | EMC Corporation |
| 14/042180 | 9363141 | SYSTEM AND METHOD FOR PARTITIONING A NETWORK | EMC Corporation |
| 14/042273 | 9268625 | SYSTEM AND METHOD FOR STORAGE MANAGEMENT | EMC Corporation |
| 14/042326 | 9372743 | SYSTEM AND METHOD FOR STORAGE MANAGEMENT | EMC Corporation |
| 14/099163 | 9355235 | VALIDATING A USER OF A VIRTUAL MACHINE FOR ADMINISTRATOR/ROOT ACCESS | EMC Corporation |
| 14/105490 | 9052832 | SYSTEM AND METHOD FOR PROVIDING LONG-TERM STORAGE FOR DATA | EMC Corporation |
| 14/105706 | 9367260 | DYNAMIC REPLICATION SYSTEM | EMC Corporation |
| 14/137448 | 9372636 | TIERED-STORAGE DESIGN | EMC Corporation |
| 14/138563 | 9348703 | IMAGE RECOVERY FROM VOLUME IMAGE FILES | EMC Corporation |
| 14/138961 | 9231962 | IDENTIFYING SUSPICIOUS USER LOGINS IN ENTERPRISE NETWORKS | EMC Corporation |
| 14/139003 | 9049221 | DETECTING SUSPICIOUS WEB TRAFFIC FROM AN ENTERPRISE NETWORK | EMC Corporation |
| 14/139019 | 9338187 | MODELING USER WORKING TIME USING AUTHENTICATION EVENTS WITHIN AN ENTERPRISE NETWORK | EMC Corporation |
| 14/172610 | 9164906 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 14/194342 | 9348831 | PERSISTENT FILE SYSTEM OBJECTS FOR MANAGEMENT OF DATABASES | EMC Corporation |
| 14/211846 | 9288042 | SECURELY AND REDUNDANTLY STORING ENCRYPTION CREDENTIALS SYSTEM AND METHOD | EMC Corporation |
| 14/218581 | 9372761 | TIME BASED CHECKPOINT RESTART | EMC Corporation |
| 14/230510 | | HETEROSCEDASTIC DATA COMPRESSION USING ARIMA-GARCH MODEL ESTIMATION | EMC Corporation |
| 14/236270 | 9354975 | LOAD BALANCING ON DISKS IN RAID BASED ON LINEAR BLOCK CODES | EMC Corporation |
| 14/243507 | 8886845 | I/O SCHEDULING SYSTEM AND METHOD | EMC Corporation |
| 14/246427 | | METHOD AND APPARATUS FOR DATABASE SANITIZING | EMC Corporation |
| 14/313143 | 9276338 | COMPLIANT PIN, ELECTRICAL ASSEMBLY INCLUDING THE COMPLIANT PIN AND METHOD OF MANUFACTURING THE COMPLIANT PIN | EMC Corporation |
| 14/319417 | 9350545 | RECOVERY MECHANISM FOR FAULT-TOLERANT SPLIT-SERVER PASSCODE VERIFICATION OF ONE-TIME AUTHENTICATION TOKENS | EMC Corporation |
| 14/329336 | | PATH SELECTION TO READ OR WRITE DATA | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14/339794 | 9087115 | MIRROR RESYNCHNRONIZATION OF FIXED PAGE LENGTH TABLES FOR BETTER REPAIR TIME TO HIGH AVAILABILITY IN DATABASES | EMC Corporation |
| 14/495404 | | METHOD AND APPARATUS FOR FILE SYSTEM | EMC Corporation |
| 14/530596 | | FLASH MODULE | EMC Corporation |
| 14/749833 | 9209833 | METHODS AND APPARATUS FOR RATIONAL COMPRESSION AND DECOMPRESSION OF NUMBERS | EMC Corporation |
| 14/884560 | | SELECTIVE FRAGMENTATION REPAIR | EMC Corporation |
| 14/923775 | 9337863 | METHODS AND APPARATUS FOR RATIONAL COMPRESSION AND DECOMPRESSION OF NUMBERS | EMC Corporation |
| 14/937680 | | GENERATION AND USE OF A MODIFIED PROTECTED FILE | EMC Corporation |
| 14/963061 | | GENERAL FRAMEWORK FOR CROSS-VALIDATION OF MACHINE LEARNING ALGORITHMS USING SQL ON DISTRIBUTED SYSTEMS | EMC Corporation |
| 14010955 | 8898357 | STORAGE INTEGRATION PLUGIN FOR VIRTUAL SERVERS | EMC Corporation |
| 14013465 | | [REDACTED] | EMC Corporation |
| 14015445 | 8930626 | CACHE MANAGEMENT SYSTEM AND METHOD | EMC Corporation |
| 14015583 | 8769198 | SYSTEM AND METHOD FOR OUT-OF-BAND CACHE COHERENCY | EMC Corporation |
| | | | |
| 14018552 | | [REDACTED] | EMC Corporation |
| 14019826 | 9195685 | MULTI-TIER RECOVERY | EMC Corporation |
| 14020291 | 8850460 | TECHNIQUES FOR PERFORMING A REMOTE PROCEDURE CALL USING REMOTE PROCEDURE CALL CONFIGURATION INFORMATION | EMC Corporation |
| 14020333 | 9069813 | QUERY TRANSLATION FOR SEARCHING COMPLEX STRUCTURES OF OBJECTS | EMC Corporation |
| 14021488 | | [REDACTED] | EMC Corporation |
| 14023016 | 9354962 | MEMORY DUMP FILE COLLECTION AND ANALYSIS USING ANALYSIS SERVER AND CLOUD KNOWLEDGE BASE | EMC Corporation |
| | | | |
| 14024793 | 9311207 | DATA STORAGE SYSTEM OPTIMIZATIONS IN A MULTI-TIERED ENVIRONMENT | EMC Corporation |
| 14024965 | 9069479 | SNAPSHOTS IN DEDUPLICATION | EMC Corporation |
| 14025333 | 9275218 | METHODS AND APPARATUS FOR VERIFICATION OF A USER AT A FIRST DEVICE BASED ON INPUT RECEIVED FROM A SECOND DEVICE | EMC Corporation |
| 14025377 | | [REDACTED] | EMC Corporation |
| 14025719 | 8799603 | EFFICIENT USE OF MEMORY AND ACCESSING OF STORED RECORDS | EMC Corporation |
| 14030044 | 9026760 | TECHNIQUES FOR ENFORCING CAPACITY RESTRICTIONS OF AN ALLOCATION POLICY | EMC Corporation |
| 14030470 | 9223792 | AUGMENTING METADATA COLLECTION FOR STORED DATA ANALYTICS | EMC Corporation |
| 14030476 | 9378047 | EFFICIENT COMMUNICATION OF INTERRUPTS FROM KERNEL SPACE TO USER SPACE USING EVENT QUEUES | EMC Corporation |

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|---|---|---|---|
| 14030511 | 9298633 | ADAPTIVE PREFECTH FOR PREDICTED WRITE REQUESTS | EMC Corporation |
| 14031130 | 8966216 | TECHNIQUES FOR AUTOMATED EVALUATION AND MOVEMENT OF DATA BETWEEN STORAGE TIERS | EMC Corporation |
| 14031210 | | [REDACTED] | EMC Corporation |
| 14031628 | 9043605 | ONLINE AND OFFLINE VALIDATION OF TOKENCODES | EMC Corporation |
| 14031833 | | [REDACTED] | EMC Corporation |
| 14032547 | | [REDACTED] | EMC Corporation |
| 14033811 | 9043592 | COMMUNICATING TRUST MODELS TO RELYING PARTIES | EMC Corporation |
| 14034027 | | [REDACTED] | EMC Corporation |
| 14034229 | 9317547 | METHOD AND SYSTEM FOR CHILDREN BACKUP APPLICATIONS COMMUNICATING TO PARENT BACKUP APPLICATIONS VIA APPLICATION PROGRAM INTERFACES | EMC Corporation |
| | | | |
| 14034603 | 9348888 | ITERATIVE FILTER EXPRESSION PROCESSING FOR FILTERING EMBEDDED DATA OBJECTS | EMC Corporation |
| 14034810 | | [REDACTED] | EMC Corporation |
| 14034893 | | [REDACTED] | EMC Corporation |
| 14034981 | | [REDACTED] | EMC Corporation |
| 14035034 | | DATA REDACTION SYSTEM | EMC Corporation |
| 14035055 | | [REDACTED] | EMC Corporation |
| 14035118 | | [REDACTED] | EMC Corporation |
| 14035124 | | [REDACTED] | EMC Corporation |
| 14035295 | | [REDACTED] | EMC Corporation |
| 14035364 | | [REDACTED] | EMC Corporation |
| 14035664 | 9256651 | INHERITANCE OF PROPERTIES FILES WITH LOCALE CHAIN SUPPORT | EMC Corporation |
| 14035768 | | [REDACTED] | EMC Corporation |
| | | | |
| 14036177 | | [REDACTED] | EMC Corporation |
| 14036225 | 9154496 | PROACTIVATION METHODS AND APPARATUS FOR PASSWORD-HARDENING SYSTEMS | EMC Corporation |
| 14036239 | 9230092 | METHODS AND APPARATUS FOR OBSCURING A VALID PASSWORD IN A SET OF PASSWORDS IN A PASSWORD-HARDENING SYSTEM | EMC Corporation |
| 14036330 | 9261925 | OPTIMIZED SERVER DESIGN USING DENSE DIMM SPACING, WIDE HEATSINK, IMPROVED ROUTING CHANNELS, AND IMPROVED AIR DELIVERY TO REAR DEVICES | EMC Corporation |
| 14036396 | | [REDACTED] | EMC Corporation |
| 14036612 | 9235630 | DATASET DISCOVERY IN DATA ANALYTICS | EMC Corporation |
| 14036635 | 9098699 | SMART TELEVISION DATA SHARING TO PROVIDE SECURITY | EMC Corporation |
| 14037199 | 9229796 | SYSTEM AND METHOD FOR DETERMINING DISK FAILURE INDICATOR TO PREDICT FUTURE DISK FAILURES | EMC Corporation |
| 14037202 | 9189309 | SYSTEM AND METHOD FOR PREDICTING SINGLE-DISK FAILURES | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14037204 | 9141457 | SYSTEM AND METHOD FOR PREDICTING MULTIPLE-DISK FAILURES | EMC Corporation |
| 14037241 | | IDENTITY AND ACCESS MANAGEMENT | EMC Corporation |
| 14037259 | 9189345 | METHOD TO PERFORM INSTANT RESTORE OF PHYSICAL MACHINES | EMC Corporation |
| 14037293 | 9317809 | HIGHLY SCALABLE MEMORY-EFFICIENT PARALLEL LDA IN A SHARED-NOTHING MPP DATABASE | EMC Corporation |
| 14037474 | | [REDACTED] | EMC Corporation |
| 14037480 | | [REDACTED] | EMC Corporation |
| 14037511 | 9037822 | HIERARCHICAL VOLUME TREE | EMC Corporation |
| 14037577 | 9378106 | HASH-BASED REPLICATION | EMC Corporation |
| 14037663 | 8909829 | METHODS AND APPARATUS FOR STORAGE POOL SELECTION | EMC Corporation |
| 14037786 | | [REDACTED] | EMC Corporation |
| 14037978 | 9336232 | NATIVE FILE ACCESS | EMC Corporation |
| 14038024 | 8976636 | TECHNIQUES FOR STORING DATA | EMC Corporation |
| 14038312 | 9313091 | ANALYTICS PLATFORM FOR AUTOMATED DIAGNOSIS, REMEDIATION, AND PROACTIVE SUPPORTABILITY | EMC Corporation |
| 14038514 | 9202052 | DYNAMIC GRAPH ANOMALY DETECTION FRAMEWORK AND SCALABLE SYSTEM ARCHITECTURE | EMC Corporation |
| 14038563 | 9237143 | USER AUTHENTICATION AVOIDING EXPOSURE OF INFORMATION ABOUT ENUMERABLE SYSTEM RESOURCES | EMC Corporation |
| 14038625 | 9367557 | SYSTEM AND METHOD FOR IMPROVING DATA COMPRESSION | EMC Corporation |
| 14038628 | | [REDACTED] | EMC Corporation |
| 14038632 | | [REDACTED] | EMC Corporation |
| 14038635 | | [REDACTED] | EMC Corporation |
| 14038637 | | [REDACTED] | EMC Corporation |
| 14038665 | 9304914 | DEDUPLICATED CACHE SYSTEM OF A STORAGE SYSTEM | EMC Corporation |
| 14038668 | 8935446 | INDEXING ARCHITECTURE FOR DEDUPLICATED CACHE SYSTEM OF A STORAGE SYSTEM | EMC Corporation |
| 14038673 | 9390116 | INSERTION AND EVICTION SCHEMES FOR DEDUPLICATED CACHE SYSTEM OF A STORAGE SYSTEM | EMC Corporation |
| 14038687 | 9189414 | FILE INDEXING USING AN EXCLUSION LIST OF A DEDUPLICATED CACHE SYSTEM OF A STORAGE SYSTEM | EMC Corporation |
| 14038694 | 9336143 | INDEXING A DEDUPLICATED CACHE SYSTEM BY INTEGRATING FINGERPRINTS OF UNDERLYING DEDUPLICATED STORAGE SYSTEM | EMC Corporation |
| 14038699 | 9189402 | METHOD FOR PACKAGING AND STORING CACHED DATA IN DEDUPLICATED CACHE SYSTEM OF A STORAGE SYSTEM | EMC Corporation |
| 14038847 | | [REDACTED] | EMC Corporation |
| 14038929 | 9240988 | COMPUTER SYSTEM EMPLOYING DUAL-BAND AUTHENTICATION | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14039019 | 9280453 | METHOD AND SYSTEM FOR TEST AUTOMATION FRAMEWORK FOR BACKUP AND RECOVERY APPLICATIONS | EMC Corporation |
| 14039099 | | [REDACTED] | EMC Corporation |
| 14039215 | | [REDACTED] | EMC Corporation |
| 14039315 | | [REDACTED] | EMC Corporation |
| 14039430 | | [REDACTED] | EMC Corporation |
| 14039463 | | [REDACTED] | EMC Corporation |
| 14039647 | | [REDACTED] | EMC Corporation |
| 14039691 | 9147063 | PASSCODE GENERATION UTILIZING SELECTED PERMUTATION TYPE APPLIED TO TOKENCODE AND PERSONAL IDENTIFIER | EMC Corporation |
| 14039868 | 9355234 | AUTHENTICATION INVOLVING SELECTION AMONG DIFFERENT BIOMETRIC METHODS DYNAMICALLY | EMC Corporation |
| 14039881 | 9154516 | DETECTING RISKY NETWORK COMMUNICATIONS BASED ON BEHAVIOR PROFILING | EMC Corporation |
| 14039891 | 9395923 | METHOD AND SYSTEM FOR RECOVERING FROM EMBEDDED ERRORS FROM WRITING DATA TO STREAMING MEDIA | EMC Corporation |
| 14039897 | | [REDACTED] | EMC Corporation |
| 14039926 | | [REDACTED] | EMC Corporation |
| 14039956 | 9262450 | USING DISTINGUISHED NAMES AND RELATIVE DISTINGUISHED NAMES FOR MERGING DATA IN AN XML SCHEMA | EMC Corporation |
| 14040052 | | [REDACTED] | EMC Corporation |
| | | | |
| 14040209 | 9355480 | UNIFORM DISTRIBUTION OF VISUAL COMPONENT WIDTHS | EMC Corporation |
| 14040226 | 9306961 | VISUAL SECURITY WORKFLOW | EMC Corporation |
| 14040248 | 9160742 | LOCALIZED RISK ANALYTICS FOR USER AUTHENTICATION | EMC Corporation |
| 14040264 | | [REDACTED] | EMC Corporation |
| 14040305 | 9350758 | DISTRIBUTED DENIAL OF SERVICE (DDOS) HONEYPOTS | EMC Corporation |
| 14040307 | | [REDACTED] | EMC Corporation |
| | | | |
| 14040350 | 9274872 | SET-BASED BUGS DISCOVERY SYSTEM VIA SQL QUERY | EMC Corporation |
| 14040382 | | [REDACTED] | EMC Corporation |
| 14040397 | 9092563 | SYSTEM FOR DISCOVERING BUGS USING INTERVAL ALGEBRA QUERY LANGUAGE | EMC Corporation |
| 14040407 | 9225691 | DEDUPLICATION OF ENCRYPTED DATASET ON DATADOMAIN BACKUP APPLIANCE | EMC Corporation |
| | | | |
| | | | |
| 14040802 | 9235632 | REPLICATION SYNCHRONIZATION | EMC Corporation |
| 14040921 | | [REDACTED] | EMC Corporation |
| 14040939 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14041013 | 9275359 | MECHANISM AND TECHNIQUES FOR DISCOVERY AND PREDICTION OF LONG-TERM-HIGH LEVEL NEARLY PERIODICAL BUSINESS PROCESSES FROM LOW-LEVEL LOGS | EMC Corporation |
| 14041067 | | [REDACTED] | EMC Corporation |
| 14041097 | 9305071 | PROVIDING VIRTUAL STORAGE PROCESSOR (VSP) MOBILITY WITH INDUCED FILE SYSTEM FORMAT MIGRATION | EMC Corporation |
| 14041103 | | [REDACTED] | EMC Corporation |
| 14041108 | | [REDACTED] | EMC Corporation |
| 14041125 | 9332433 | DISTRIBUTING ACCESS AND IDENTIFICATION TOKENS IN A MOBILE ENVIRONMENT | EMC Corporation |
| 14041150 | 9325499 | MESSAGE ENCRYPTION AND DECRYPTION UTILIZING LOW-ENTROPY KEYS | EMC Corporation |
| 14041176 | 9378261 | UNIFIED SYNCHRONOUS REPLICATION FOR BLOCK AND FILE OBJECTS | EMC Corporation |
| 14041191 | 9305009 | SYNCHRONOUS REPLICATION OF VIRTUALIZED STORAGE PROCESSORS | EMC Corporation |
| 14041194 | | [REDACTED] | EMC Corporation |
| 14041204 | 9378219 | METRO-CLUSTER BASED ON SYNCHRONOUS REPLICATION OF VIRTUALIZED STORAGE PROCESSORS | EMC Corporation |
| 14041217 | 9152353 | VERIFYING THE CONSISTENCY OF SLICE ALLOCATION METADATA | EMC Corporation |
| 14041229 | | [REDACTED] | EMC Corporation |
| 14041238 | 9330155 | UNIFIED MANAGEMENT OF SYNC AND ASYNC REPLICATION FOR BLOCK AND FILE OBJECTS | EMC Corporation |
| 14041290 | 9177670 | METHOD AND APPARATUS FOR FLASH CACHE MANAGEMENT | EMC Corporation |
| 14041314 | | [REDACTED] | EMC Corporation |
| 14041317 | | [REDACTED] | EMC Corporation |
| 14041332 | 9244711 | VIRTUAL MACHINE CAPACITY PLANNING | EMC Corporation |
| 14041456 | | [REDACTED] | EMC Corporation |
| 14041567 | | [REDACTED] | EMC Corporation |
| 14041795 | | [REDACTED] | EMC Corporation |
| 14041820 | | [REDACTED] | EMC Corporation |
| 14041823 | 9201736 | METHODS AND APPARATUS FOR RECOVERY OF COMPLEX ASSETS IN DISTRIBUTED INFORMATION PROCESSING SYSTEMS | EMC Corporation |
| 14041847 | | [REDACTED] | EMC Corporation |
| 14041855 | | [REDACTED] | EMC Corporation |
| 14041864 | | [REDACTED] | EMC Corporation |
| 14041893 | | [REDACTED] | EMC Corporation |
| 14041899 | | [REDACTED] | EMC Corporation |
| 14041977 | | [REDACTED] | EMC Corporation |
| 14041988 | | [REDACTED] | EMC Corporation |
| 14042088 | | [REDACTED] | EMC Corporation |
| | | | |
| | | | |
| 14042242 | | [REDACTED] | EMC Corporation |
| 14042252 | | [REDACTED] | EMC Corporation |
| | | | |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14042304 | | [REDACTED] | EMC Corporation |
| 14042369 | | [REDACTED] | EMC Corporation |
| 14042396 | | [REDACTED] | EMC Corporation |
| 14042411 | 9231357 | MID-PLANE ASSEMBLY | EMC Corporation |
| 14042470 | | [REDACTED] | EMC Corporation |
| 14042488 | | [REDACTED] | EMC Corporation |
| 14042491 | 9274874 | AUTOMATED DEFECT DIAGNOSIS FROM MACHINE DIAGNOSTIC DATA | EMC Corporation |
| 14042494 | | [REDACTED] | EMC Corporation |
| 14042501 | | [REDACTED] | EMC Corporation |
| 14042504 | 9357666 | FIELD-SERVICEABLE IT DEVICE | EMC Corporation |
| 14042511 | | [REDACTED] | EMC Corporation |
| | | | |
| 14042535 | 9207726 | IT DEVICE | EMC Corporation |
| 14042551 | | [REDACTED] | EMC Corporation |
| 14042645 | | [REDACTED] | EMC Corporation |
| 14042688 | 9159115 | PROCESSING VECTORIZED ELEMENTS ASSOCIATED WITH IT SYSTEM IMAGES | EMC Corporation |
| 14042703 | 9129386 | PROCESSING IMAGE DATA ASSOCIATED WITH IT SYSTEM COMPONENTS | EMC Corporation |
| 14042708 | | [REDACTED] | EMC Corporation |
| 14048952 | 8819478 | AUTO-ADAPTING MULTI-TIER CACHE | EMC Corporation |
| 14051713 | | [REDACTED] | EMC Corporation |
| 14055031 | | [REDACTED] | EMC Corporation |
| 14056106 | 8856397 | TECHNIQUES FOR STATISTICS COLLECTION IN CONNECTION WITH DATA STORAGE PERFORMANCE. | EMC Corporation |
| 14058357 | 8942073 | MAINTAINING TAPE EMULATION CONSISTENCY | EMC Corporation |
| 14058389 | 8850538 | AGILE OTP GENERATION | EMC Corporation |
| 14058469 | 8880484 | COMPRESSION FORECASTING FOR A DEDUPLICATING STORAGE SYSTEM | EMC Corporation |
| 14058511 | | METHOD AND APPARATUS FOR DIAGNOSIS AND RECOVERY OF SYSTEM PROBLEMS | EMC Corporation |
| | | | |
| 14061532 | 8949282 | EFFICIENT STORAGE OF NON-SEARCHABLE ATTRIBUTES | EMC Corporation |
| 14063241 | | METHOD AND APPARATUS FOR PROVIDING CACHING SERVICE IN NETWORK INFRASTRUCTURE | EMC Corporation |
| 14065675 | | [REDACTED] | EMC Corporation |
| 14065688 | | [REDACTED] | EMC Corporation |
| 14065812 | | [REDACTED] | EMC Corporation |
| 14066252 | | INSTANTIATING VIRTUAL APPLIANCES | EMC Corporation |
| 14068288 | | [REDACTED] | EMC Corporation |
| 14073237 | 8923497 | REDIRECTING AND MIRRORING OF TELEPHONIC COMMUNICATIONS | EMC Corporation |
| | | | |
| | | | |
| 14080290 | 9294474 | VERIFICATION BASED ON INPUT COMPRISING CAPTURED IMAGES, CAPTURED AUDIO AND TRACKED EYE MOVEMENT | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14080306 | 9323911 | USER VERIFICATION METHOD WITH DATA REMOVAL PROTECTION | EMC Corporation |
| 14080327 | 9280645 | LOCAL-REMOTE VERIFICATION | EMC Corporation |
| 14080520 | | [REDACTED] | EMC Corporation |
| 14083201 | | [REDACTED] | EMC Corporation |
| 14083254 | | [REDACTED] | EMC Corporation |
| 14083283 | | [REDACTED] | EMC Corporation |
| 14084290 | 9043595 | SELECTIVE SHREDDING IN A DEDUPLICATION SYSTEM | EMC Corporation |
| 14085195 | 9037795 | MANAGING DATA STORAGE BY PROVISIONING CACHE AS A VIRTUAL DEVICE | EMC Corporation |
| 14085511 | | [REDACTED] | EMC Corporation |
| 14089862 | 8973096 | FRAUD DETECTION IN ADAPTIVE AUTHENTICATION SYSTEMS | EMC Corporation |
| 14089909 | | METHOD AND APPARATUS FOR RECOGNIZING IMAGE CONTENT | EMC Corporation |
| 14089931 | 8904146 | TECHNIQUES FOR DATA STORAGE ARRAY VIRTUALIZATION | EMC Corporation |
| 14090146 | | [REDACTED] | EMC Corporation |
| 14090777 | 8898387 | DATA CACHING SYSTEM AND METHOD | EMC Corporation |
| 14090937 | | [REDACTED] | EMC Corporation |
| 14091237 | | [REDACTED] | EMC Corporation |
| 14091256 | | [REDACTED] | EMC Corporation |
| 14091735 | | [REDACTED] | EMC Corporation |
| 14092028 | | [REDACTED] | EMC Corporation |
| 14092427 | 9292520 | ADVANCED VIRTUAL SYNTHETIC FULL BACKUP SYNTHESIZED FROM PREVIOUS FULL-BACKUPS | EMC Corporation |
| 14097759 | | [REDACTED] | EMC Corporation |
| 14097826 | | [REDACTED] | EMC Corporation |
| 14098213 | 8836548 | METHOD AND SYSTEM FOR DATA COMPRESSION AT A STORAGE SYSTEM | EMC Corporation |
| 14098269 | | [REDACTED] | EMC Corporation |
| 14098271 | 9176675 | FAST-ZEROING IN A FILE SYSTEM | EMC Corporation |
| 14100466 | | APPARATUS AND METHOD FOR SEARCHING INFORMATION | EMC Corporation |
| 14101091 | | [REDACTED] | EMC Corporation |
| 14102043 | 9225529 | ENCRYPTED VIRTUAL MACHINES IN A CLOUD | EMC Corporation |
| 14102111 | | [REDACTED] | EMC Corporation |
| 14102770 | | [REDACTED] | EMC Corporation |
| 14104250 | | [REDACTED] | EMC Corporation |
| 14104982 | | [REDACTED] | EMC Corporation |
| 14105037 | | [REDACTED] | EMC Corporation |
| 14105567 | | [REDACTED] | EMC Corporation |
| 14105608 | | [REDACTED] | EMC Corporation |
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| 14107305 | 9128622 | NETWORK VIRTUALIZATION-AWARE DATA STORAGE SYSTEM | EMC Corporation |
| 14107921 | | [REDACTED] | EMC Corporation |
| 14108002 | | [REDACTED] | EMC Corporation |
| 14108021 | | [REDACTED] | EMC Corporation |
| 14108032 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14108053 | | [REDACTED] | EMC Corporation |
| 14108060 | | [REDACTED] | EMC Corporation |
| 14108150 | | [REDACTED] | EMC Corporation |
| 14108473 | | [REDACTED] | EMC Corporation |
| 14108497 | 9009355 | PROCESSING REQUESTS TO A DATA STORE DURING BACK UP | EMC Corporation |
| 14108653 | | [REDACTED] | EMC Corporation |
| | | | |
| | | | |
| 14108979 | | [REDACTED] | EMC Corporation |
| 14109030 | | METHOD AND SYSTEM FOR DATA PROTECTION | EMC Corporation |
| 14109381 | | [REDACTED] | EMC Corporation |
| 14122396 | 9378460 | PROVISIONING STORAGE RESOURCES BASED ON AN EXPERT SYSTEM | EMC Corporation |
| 14122404 | 9304859 | POLAR CODES FOR EFFICIENT ENCODING AND DECODING IN REDUNDANT DISK ARRAYS | EMC Corporation |
| | | | |
| 14132308 | | [REDACTED] | EMC Corporation |
| 14132669 | | [REDACTED] | EMC Corporation |
| 14132715 | | METHOD AND APPARATUS FOR USER AUTHENTICATION | EMC Corporation |
| 14132730 | 9202035 | USER AUTHENTICATION BASED ON BIOMETRIC HANDWRITING ASPECTS OF A HANDWRITTEN CODE | EMC Corporation |
| 14132750 | | [REDACTED] | EMC Corporation |
| 14132894 | | [REDACTED] | EMC Corporation |
| 14132921 | | [REDACTED] | EMC Corporation |
| 14132933 | | [REDACTED] | EMC Corporation |
| 14133371 | | [REDACTED] | EMC Corporation |
| 14133466 | | [REDACTED] | EMC Corporation |
| 14133705 | 9258242 | PATH SELECTION USING A SERVICE LEVEL OBJECTIVE | EMC Corporation |
| 14133774 | | [REDACTED] | EMC Corporation |
| 14133852 | | [REDACTED] | EMC Corporation |
| 14133892 | | [REDACTED] | EMC Corporation |
| 14133929 | | [REDACTED] | EMC Corporation |
| 14133945 | 9158630 | TESTING INTEGRITY OF REPLICATED STORAGE | EMC Corporation |
| 14134521 | | [REDACTED] | EMC Corporation |
| 14134746 | 9235715 | TECHNIQUES FOR INCREASING MOBILE DEVICE SECURITY | EMC Corporation |
| 14134748 | | [REDACTED] | EMC Corporation |
| 14134773 | | [REDACTED] | EMC Corporation |
| 14135029 | | [REDACTED] | EMC Corporation |
| 14135046 | | [REDACTED] | EMC Corporation |
| 14135385 | 9274907 | DECOMMISSIONING OF VIRTUAL BACKUP APPLIANCES | EMC Corporation |
| | | | |
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| 14136177 | | [REDACTED] | EMC Corporation |
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| Application Number | Registration Number | Title | Owner |
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| 14136288 | 9317189 | METHOD TO INPUT CONTENT IN A STRUCTURED MANNER WITH REAL-TIME ASSISTANCE AND VALIDATION | EMC Corporation |
| | | | |
| | | | |
| 14136368 | | [REDACTED] | EMC Corporation |
| 14136871 | 9185100 | DEVICE PAIRING USING A CRYPTOGRAPHIC COMMITMENT PROCESS INVOLVING MEASURED MOTION VALUES | EMC Corporation |
| 14136964 | 9298847 | LATE BOUND, TRANSACTIONAL CONFIGURATION SYSTEM AND METHODS | EMC Corporation |
| 14137457 | | [REDACTED] | EMC Corporation |
| 14137559 | 9317216 | SMR AUTO-TIERING | EMC Corporation |
| 14137575 | | [REDACTED] | EMC Corporation |
| 14137754 | | [REDACTED] | EMC Corporation |
| 14137759 | 9268640 | LIMITING DATA LOSS ON PARITY RAID GROUPS | EMC Corporation |
| 14137768 | | [REDACTED] | EMC Corporation |
| 14137774 | 9244811 | SYSTEM AND METHOD FOR SMART FRAMEWORK FOR NETWORK BACKUP SOFTWARE DEBUGGING | EMC Corporation |
| 14137788 | | [REDACTED] | EMC Corporation |
| 14137850 | | [REDACTED] | EMC Corporation |
| 14138260 | 9223800 | CLUSTER FILE SYSTEM PROVIDING OBJECT STORE AND FUNCTIONALITY FOR TRANSFORMATION OF METADATA FILES INTO OBJECTS | EMC Corporation |
| 14138297 | | [REDACTED] | EMC Corporation |
| 14138415 | | [REDACTED] | EMC Corporation |
| 14138451 | | [REDACTED] | EMC Corporation |
| 14138520 | | [REDACTED] | EMC Corporation |
| 14138525 | | [REDACTED] | EMC Corporation |
| 14138534 | | [REDACTED] | EMC Corporation |
| 14138538 | 9348849 | BACKUP CLIENT ZERO-MANAGEMENT | EMC Corporation |
| 14138622 | | [REDACTED] | EMC Corporation |
| 14138626 | 9305151 | RISK-BASED AUTHENTICATION USING LOCKOUT STATES | EMC Corporation |
| 14138756 | | [REDACTED] | EMC Corporation |
| 14138848 | 9143504 | SECURE COMMUNICATION INFRASTRUCTURE | EMC Corporation |
| 14139011 | | [REDACTED] | EMC Corporation |
| 14139036 | | [REDACTED] | EMC Corporation |
| 14139105 | | [REDACTED] | EMC Corporation |
| 14139572 | | [REDACTED] | EMC Corporation |
| 14139688 | | [REDACTED] | EMC Corporation |
| 14139760 | 9053236 | AUTOMATED DIRECTORY SERVICES TEST SETUP UTILITY | EMC Corporation |
| 14139927 | 9329805 | HOST ORIENTED AUTOMATIC VERIFICATION OF BEST PRACTICES | EMC Corporation |
| 14139931 | 8990463 | TRANSFER OF DATA STORAGE DEVICE FEATURES | EMC Corporation |
| 14139956 | | [REDACTED] | EMC Corporation |
| 14140047 | | [REDACTED] | EMC Corporation |
| 14140132 | | [REDACTED] | EMC Corporation |
| 14140135 | | [REDACTED] | EMC Corporation |
| 14140721 | 9201770 | A/B TESTING OF INSTALLED GRAPHICAL USER INTERFACES | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14141107 | | METHOD AND APPARATUS FOR PROVIDING COMPUTING RESOURCES | EMC Corporation |
| 14141221 | | [REDACTED] | EMC Corporation |
| 14141258 | | [REDACTED] | EMC Corporation |
| 14141287 | 9384206 | MANAGING DATA DEDUPLICATION IN STORAGE SYSTEMS | EMC Corporation |
| 14141310 | 9229797 | DEFERRED DRIVE PROCESSING | EMC Corporation |
| 14141376 | | [REDACTED] | EMC Corporation |
| 14141643 | 9307015 | CLOUD BLACK BOX FOR CLOUD INFRASTRUCTURE | EMC Corporation |
| 14141869 | | [REDACTED] | EMC Corporation |
| 14141988 | 8819308 | PSEUDO WRITING SYSTEM AND METHOD | EMC Corporation |
| 14142007 | 9298555 | MANAGING RECOVERY OF FILE SYSTEMS | EMC Corporation |
| 14142498 | | [REDACTED] | EMC Corporation |
| 14142501 | | [REDACTED] | EMC Corporation |
| 14142534 | | [REDACTED] | EMC Corporation |
| 14142569 | | [REDACTED] | EMC Corporation |
| 14142578 | | [REDACTED] | EMC Corporation |
| 14143020 | | [REDACTED] | EMC Corporation |
| 14143036 | | [REDACTED] | EMC Corporation |
| 14143089 | | [REDACTED] | EMC Corporation |
| 14143174 | 9330727 | BINDING A DATA OBJECT TO A ROTATIONAL HARD DRIVE | EMC Corporation |
| 14143295 | | METHOD, SYSTEM, AND APPARATUS FOR SECURING A COMPUTER THROUGH DETECTION OF USER PROXIMITY | EMC Corporation |
| 14143347 | | [REDACTED] | EMC Corporation |
| 14143396 | | [REDACTED] | EMC Corporation |
| 14143402 | | [REDACTED] | EMC Corporation |
| 14143778 | | [REDACTED] | EMC Corporation |
| 14143790 | | [REDACTED] | EMC Corporation |
| 14143825 | | [REDACTED] | EMC Corporation |
| 14143863 | 9305010 | VIRTUAL FILE SYSTEM PROVIDING INTERFACE BETWEEN ANALYTICS PLATFORM AND PHYSICAL FILE SYSTEM | EMC Corporation |
| 14143970 | | [REDACTED] | EMC Corporation |
| 14143981 | 9378082 | DIAGNOSIS OF STORAGE SYSTEM COMPONENT ISSUES VIA DATA ANALYTICS | EMC Corporation |
| 14143993 | | [REDACTED] | EMC Corporation |
| 14144007 | | [REDACTED] | EMC Corporation |
| 14144019 | 9330416 | VISUALIZATION OF FRAUD PATTERNS | EMC Corporation |
| 14144644 | 9286003 | METHOD AND APPARATUS FOR CREATING A SHORT HASH HANDLE HIGHLY CORRELATED WITH A GLOBALLY-UNIQUE HASH SIGNATURE | EMC Corporation |
| 14144647 | | [REDACTED] | EMC Corporation |
| 14144651 | | [REDACTED] | EMC Corporation |
| 14144780 | 9367515 | MANAGING ADAPTIVE REBOOTS ON MULTIPLE STORAGE PROCESSORS | EMC Corporation |
| 14144835 | 9230121 | TECHNIQUES FOR PERSISTENTLY TOGGLING A FIPS-140 CRYPTOGRAPHIC MODE OF A CLUSTERED STORAGE SYSTEM | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14144892 | 9350735 | CONTEXT-BASED DYNAMIC INFORMATION RIGHTS MANAGEMENT | EMC Corporation |
| 14144930 | | PARALLEL ON-PREMISES AND CLOUD-BASED AUTHENTICATION | EMC Corporation |
| 14144940 | 9332434 | POLICY-BASED LOCATION COLLECTION FOR AUTHENTICATION | EMC Corporation |
| 14144970 | | [REDACTED] | EMC Corporation |
| 14145012 | | [REDACTED] | EMC Corporation |
| | | | |
| 14145125 | | [REDACTED] | EMC Corporation |
| 14145266 | 9213648 | SYSTEM, APPARATUS, AND METHOD OF SECURELY ERASING CACHE | EMC Corporation |
| 14145284 | 9286238 | SYSTEM, APPARATUS, AND METHOD OF CACHE MANAGEMENT | EMC Corporation |
| 14145302 | 9323669 | SYSTEM, APPARATUS, AND METHOD OF INITIALIZING CACHE | EMC Corporation |
| 14145313 | 9170942 | SYSTEM, APPARATUS, AND METHOD OF AUTOMATIC DATA PADDING | EMC Corporation |
| 14145327 | 9069783 | ACTIVE-ACTIVE SCALE-OUT FOR UNIFIED DATA PATH ARCHITECTURE | EMC Corporation |
| 14145351 | | [REDACTED] | EMC Corporation |
| 14145859 | | [REDACTED] | EMC Corporation |
| | | | |
| | | | |
| 14149609 | 9182917 | STORAGE SYSTEM POLLING REDUCTION | EMC Corporation |
| 14152126 | 9026696 | USING I/O TRACK INFORMATION FOR CONTINUOUS PUSH WITH SPLITTER FOR STORAGE DEVICE | EMC Corporation |
| 14154407 | 8875134 | ACTIVE/ACTIVE STORAGE AND VIRTUAL MACHINE MOBILITY OVER ASYNCHRONOUS DISTANCES | EMC Corporation |
| 14155596 | | MOBILE PRODUCT AND SERVICE INFORMATION MANAGEMENT | EMC Corporation |
| 14156678 | | [REDACTED] | EMC Corporation |
| 14161910 | 9092145 | SNAPSHOTTING OF A PERFORMANCE STORAGE SYSTEM IN A SYSTEM FOR PERFORMANCE IMPROVEMENT OF A CAPACITY OPTIMIZED STORAGE SYSTEM | EMC Corporation |
| 14162409 | 9244790 | SYSTEM AND METHOD FOR PREDICTING FUTURE DISK FAILURES | EMC Corporation |
| 14164612 | 9311001 | METHOD AND APPARATUS FOR IMPLEMENTING HIGH-PERFORMANCE, SCALABLE DATA PROCESSING AND STORAGE SYSTEMS | EMC Corporation |
| 14167314 | 9356626 | DATA ENCODING FOR DATA STORAGE SYSTEM BASED ON GENERALIZED CONTATENATED CODES | EMC Corporation |
| 14167389 | 9229811 | FOLDED CODES FOR CORRECTION OF LATENT MEDIA ERRORS | EMC Corporation |
| 14168478 | 9280416 | SELECTION OF ERASURE CODE PARAMETERS FOR NO DATA REPAIR | EMC Corporation |
| 14169013 | 8972320 | SMART CONTAINERS | EMC Corporation |
| 14169811 | | [REDACTED] | EMC Corporation |
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| Application Number | Registration Number | Title | Owner |
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| 14173105 | | COLLECTING DATA IN INTERNET OF THINGS | EMC Corporation |
| | | | |
| 14174684 | | METADATA CACHE SUPPORTING MULTIPLE HETEROGENEOUS SYSTEMS | EMC Corporation |
| 14175328 | 9063839 | CAPACITY FORECASTING FOR BACKUP STORAGE | EMC Corporation |
| 14177576 | | [REDACTED] | EMC Corporation |
| 14183061 | | [REDACTED] | EMC Corporation |
| 14189326 | | [REDACTED] | EMC Corporation |
| 14189571 | 9183216 | CLUSTER STORAGE USING SUBSEGMENTING FOR EFFICIENT STORAGE | EMC Corporation |
| 14189707 | 9223679 | LIGHTWEIGHT, NON-INTRUSIVE, AND FLEXIBLE APPARATUS TO OBTAIN SYSTEM AND PROCESS STATE | EMC Corporation |
| 14190195 | 9256725 | CREDENTIAL RECOVERY WITH THE ASSISTANCE OF TRUSTED ENTITIES | EMC Corporation |
| 14193963 | 9354896 | HYPERVISOR UTILIZATION TO REDUCE BOOTSTRAP TIME FOR DATA STORAGE SYSTEM | EMC Corporation |
| 14196308 | | [REDACTED] | EMC Corporation |
| 14197618 | 9383940 | TECHNIQUES FOR PERFORMING DATA MIGRATION | EMC Corporation |
| 14197638 | | METHOD AND APPARATUS FOR PARALLEL COMPUTING | EMC Corporation |
| 14198019 | | DETERMINING CORRECTNESS OF AN APPLICATION | EMC Corporation |
| 14200572 | | [REDACTED] | EMC Corporation |
| 14200593 | | [REDACTED] | EMC Corporation |
| 14200604 | 9304893 | INTEGRATED SOFTWARE DEVELOPMENT AND TEST CASE MANAGEMENT SYSTEM | EMC Corporation |
| 14202767 | 9323765 | SCALABLE CLOUD FILE SYSTEM WITH EFFICIENT INTEGRITY CHECKS | EMC Corporation |
| 14206378 | | [REDACTED] | EMC Corporation |
| 14207078 | 9195851 | OFFLOADING ENCRYPTION TO THE CLIENT | EMC Corporation |
| 14208045 | | [REDACTED] | EMC Corporation |
| 14209587 | | [REDACTED] | EMC Corporation |
| 14211109 | | DATA MANAGEMENT IN A MULTI-TENANT DISTRIBUTIVE ENVIRONMENT | EMC Corporation |
| 14211546 | | A METHOD AND APPARATUS FOR EFFICIENT DATA COPYING AND DATA MIGRATION | EMC Corporation |
| 14211574 | | DATABASE SEARCH | EMC Corporation |
| 14211736 | 9286230 | SPARSE VOLUME MANAGEMENT CACHE MECHANISM | EMC Corporation |
| 14217738 | | [REDACTED] | EMC Corporation |
| 14218024 | | [REDACTED] | EMC Corporation |
| 14220391 | | [REDACTED] | EMC Corporation |
| 14221469 | | [REDACTED] | EMC Corporation |
| 14221608 | 9094447 | COMPUTER SECURITY APPLICATION CONFIGURATION STRUCTURE EMPLOYING INDEPENDENTLY SPECIFIED CONFIGURATION OBJECTS AND SEPARATE RESOLVER | EMC Corporation |
| 14222200 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14222938 | | [REDACTED] | EMC Corporation |
| 14222971 | | [REDACTED] | EMC Corporation |
| 14223190 | | [REDACTED] | EMC Corporation |
| 14223265 | | [REDACTED] | EMC Corporation |
| 14224303 | | [REDACTED] | EMC Corporation |
| 14225033 | 9311496 | PRIVACY SCREEN-BASED SECURITY | EMC Corporation |
| 14225036 | | [REDACTED] | EMC Corporation |
| 14225069 | | [REDACTED] | EMC Corporation |
| 14225089 | | [REDACTED] | EMC Corporation |
| 14225104 | | [REDACTED] | EMC Corporation |
| 14225188 | | [REDACTED] | EMC Corporation |
| | | | |
| 14225697 | 9231955 | MULTIPARTY AUTHORIZATION FOR CONTROLLING RESOURCE ACCESS | EMC Corporation |
| 14225959 | | [REDACTED] | EMC Corporation |
| 14227051 | 9063661 | AUTOMATED UPDATING OF PARAMETERS AND METADATA IN A FEDERATED STORAGE ENVIRONMENT | EMC Corporation |
| 14227058 | | [REDACTED] | EMC Corporation |
| 14227161 | 9268693 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 14227202 | | [REDACTED] | EMC Corporation |
| 14227208 | 9389800 | SYNTHESIZING VIRTUAL MACHINE DISK BACKUPS | EMC Corporation |
| 14227234 | | [REDACTED] | EMC Corporation |
| 14227290 | 9348827 | FILE-BASED SNAPSHOTS FOR BLOCK-BASED BACKUPS | EMC Corporation |
| 14227388 | | [REDACTED] | EMC Corporation |
| 14227766 | | [REDACTED] | EMC Corporation |
| 14228559 | | [REDACTED] | EMC Corporation |
| 14228647 | | [REDACTED] | EMC Corporation |
| 14228754 | | [REDACTED] | EMC Corporation |
| 14228945 | | [REDACTED] | EMC Corporation |
| 14228971 | | [REDACTED] | EMC Corporation |
| 14228982 | 9367398 | BACKING UP JOURNAL DATA TO A MEMORY OF ANOTHER NODE | EMC Corporation |
| 14229000 | | [REDACTED] | EMC Corporation |
| 14229020 | | [REDACTED] | EMC Corporation |
| 14229028 | | [REDACTED] | EMC Corporation |
| 14229049 | | [REDACTED] | EMC Corporation |
| 14229085 | | [REDACTED] | EMC Corporation |
| 14229222 | | [REDACTED] | EMC Corporation |
| 14229323 | 9330103 | PRESERVING FILE HANDLES WHEN MOVING FILE SYSTEM OPERATION BETWEEN STORAGE PROCESSORS | EMC Corporation |
| 14229364 | | [REDACTED] | EMC Corporation |
| 14229467 | 9189339 | REPLICATION OF A VIRTUAL DISTRIBUTED VOLUME WITH VIRTUAL MACHINE GRANULARITY | EMC Corporation |
| 14229491 | | [REDACTED] | EMC Corporation |
| 14229536 | | [REDACTED] | EMC Corporation |
| 14230118 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14230164 | | [REDACTED] | EMC Corporation |
| 14230168 | | [REDACTED] | EMC Corporation |
| 14230173 | | [REDACTED] | EMC Corporation |
| 14230227 | 9286004 | MANAGING I/O OPERATIONS IN MULTI-CORE SYSTEMS | EMC Corporation |
| 14230359 | | [REDACTED] | EMC Corporation |
| 14230405 | | [REDACTED] | EMC Corporation |
| 14230414 | 9342465 | ENCRYPTING DATA IN A FLASH-BASED CONTENTS-ADDRESSABLE BLOCK | EMC Corporation |
| 14230425 | | [REDACTED] | EMC Corporation |
| 14230545 | | [REDACTED] | EMC Corporation |
| 14230551 | | [REDACTED] | EMC Corporation |
| 14230583 | | [REDACTED] | EMC Corporation |
| 14230589 | | [REDACTED] | EMC Corporation |
| 14230596 | 9280427 | STORAGE SYSTEM PERFORMANCE RECOVERY AFTER STORAGE PROCESSOR FAILURE | EMC Corporation |
| 14230598 | | [REDACTED] | EMC Corporation |
| 14230644 | 9286226 | STORAGE PROCESSOR HARDWARE UPGRADE IN A STORAGE SYSTEM | EMC Corporation |
| 14230804 | 9110820 | HYBRID DATA STORAGE SYSTEM IN AN HPC EXASCALE ENVIRONMENT | EMC Corporation |
| 14230818 | | [REDACTED] | EMC Corporation |
| 14230831 | | [REDACTED] | EMC Corporation |
| 14230845 | | [REDACTED] | EMC Corporation |
| 14230863 | | [REDACTED] | EMC Corporation |
| 14230891 | | [REDACTED] | EMC Corporation |
| 14230928 | | [REDACTED] | EMC Corporation |
| 14230930 | | [REDACTED] | EMC Corporation |
| 14231075 | | [REDACTED] | EMC Corporation |
| 14231148 | | [REDACTED] | EMC Corporation |
| 14231151 | 9164681 | METHOD AND APPARATUS FOR DYNAMIC PATH-SELECTION FOR IMPROVING I/O PERFORMANCE IN VIRTUAL PROVISIONED STORAGE ARRAYS WITH DATA STRIPING | EMC Corporation |
| 14231162 | | [REDACTED] | EMC Corporation |
| | | | |
| 14231248 | | [REDACTED] | EMC Corporation |
| 14231293 | | [REDACTED] | EMC Corporation |
| 14231381 | | [REDACTED] | EMC Corporation |
| 14231384 | | [REDACTED] | EMC Corporation |
| 14231391 | | [REDACTED] | EMC Corporation |
| 14231704 | | [REDACTED] | EMC Corporation |
| 14236230 | | OFFLOADING RAID UPDATE OPERATIONS TO DISK CONTROLLERS | EMC Corporation |
| 14236273 | 9379989 | CONGESTION AVOIDANCE AND CONTROL FOR UPD BASED PROTOCOLS | EMC Corporation |
| 14236290 | 9232222 | LOSSLESS COLOR IMAGE COMPRESSION ADAPTIVELY USING SPATIAL PREDICTION OR INTER-COMPONENT PREDICTION | EMC Corporation |
| 14244777 | 9275251 | SEGMENT DEDUPLICATION SYSTEM WITH ENCRYPTION AND COMPRESSION OF SEGMENTS | EMC Corporation |

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|---|---|---|---|
| 14245998 | | MODEL FRAMEWORK TO FACILITATE ROBUST PROGRAMMING OF DISTRIBUTED WORKFLOWS | EMC Corporation |
| 14249749 | | IDENTITY PROTOCOL TRANSLATION GATEWAY | EMC Corporation |
| 14251153 | 9268696 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 14255221 | 9268711 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| | | | |
| 14259068 | 9026494 | SYNCHRONIZATION OF STORAGE USING COMPARISONS OF FINGERPRINTS OF BLOCKS | EMC Corporation |
| 14264383 | | [REDACTED] | EMC Corporation |
| 14267675 | | CAPACITY FORECASTING FOR A DEDUPLICATING STORAGE SYSTEM | EMC Corporation |
| 14267733 | | STATE-BASED DIRECTING OF SEGMENTS IN A MULTINODE DEDUPLICATED STORAGE SYSTEM | EMC Corporation |
| 14267799 | 9201949 | INDEX SEARCHING USING A BLOOM FILTER | EMC Corporation |
| 14269758 | | SYSTEM AND METHOD FOR RESOURCE SHARING ACROSS MULTI-CLOUD ARRAYS | EMC Corporation |
| 14271246 | | SEGMENT DEDUPLICATION SYSTEM WITH COMPRESSION OF SEGMENTS | EMC Corporation |
| 14280425 | | SUBSEGMENTING FOR EFFICIENT STORAGE, RESEMBLANCE DETERMINATION, AND TRANSMISSION | EMC Corporation |
| 14281855 | 9256373 | INVULNERABLE DATA MOVEMENT FOR FILE SYSTEM UPGRADE | EMC Corporation |
| 14282098 | | [REDACTED] | EMC Corporation |
| | | | |
| 14282318 | 9250823 | ONLINE REPLACEMENT OF PHYSICAL STORAGE IN A VIRTUAL STORAGE SYSTEM | EMC Corporation |
| 14284298 | | [REDACTED] | EMC Corporation |
| 14285229 | | [REDACTED] | EMC Corporation |
| 14289065 | 9104436 | COMPILER DIRECTIVES FOR MEMORY MANAGEMENT | EMC Corporation |
| 14289282 | 9128950 | REPRESENTING DE-DUPLICATED FILE DATA | EMC Corporation |
| 14290632 | | [REDACTED] | EMC Corporation |
| 14290898 | 9189342 | GENERIC PROCESS FOR DETERMINING CHILD TO PARENT INHERITANCE FOR FAST PROVISIONED OR LINKED CLONE VIRTUAL MACHINES | EMC Corporation |
| 14290928 | 9292327 | OPTIMIZATION FOR INCREMENTAL BACKUP OF VMS | EMC Corporation |
| 14291395 | | [REDACTED] | EMC Corporation |
| 14291500 | | [REDACTED] | EMC Corporation |
| 14292183 | | [REDACTED] | EMC Corporation |
| 14292290 | | [REDACTED] | EMC Corporation |
| 14292309 | 9367402 | COEXISTENCE OF BLOCK BASED BACKUP (BBB) PRODUCTS | EMC Corporation |
| 14292714 | | [REDACTED] | EMC Corporation |
| 14293977 | | [REDACTED] | EMC Corporation |
| 14296501 | 9037816 | REVERSING A COMMUNICATION PATH BETWEEN STORAGE DEVICES | EMC Corporation |
| 14297467 | | [REDACTED] | EMC Corporation |
| 14297475 | | [REDACTED] | EMC Corporation |

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|---|---|---|---|
| 14298443 | | [REDACTED] | EMC Corporation |
| 14298621 | | [REDACTED] | EMC Corporation |
| 14298680 | | [REDACTED] | EMC Corporation |
| 14298698 | | [REDACTED] | EMC Corporation |
| 14300524 | | [REDACTED] | EMC Corporation |
| 14302552 | | [REDACTED] | EMC Corporation |
| 14302558 | | [REDACTED] | EMC Corporation |
| 14302570 | | [REDACTED] | EMC Corporation |
| 14303402 | | [REDACTED] | EMC Corporation |
| 14303418 | | [REDACTED] | EMC Corporation |
| 14303427 | | [REDACTED] | EMC Corporation |
| 14304616 | | [REDACTED] | EMC Corporation |
| 14304623 | | [REDACTED] | EMC Corporation |
| 14307710 | | [REDACTED] | EMC Corporation |
| 14308590 | | [REDACTED] | EMC Corporation |
| 14308599 | | [REDACTED] | EMC Corporation |
| 14310148 | | [REDACTED] | EMC Corporation |
| 14310150 | | [REDACTED] | EMC Corporation |
| 14310178 | 9274718 | MIGRATION IN REPLICATION SYSTEM | EMC Corporation |
| 14310179 | | [REDACTED] | EMC Corporation |
| 14310264 | | [REDACTED] | EMC Corporation |
| 14310330 | | [REDACTED] | EMC Corporation |
| 14310474 | | MEASURING PERFORMANCE OF STORAGE SYSTEM | EMC Corporation |
| 14311157 | 9201699 | DECOMMISSIONING VIRTUAL APPLIANCES | EMC Corporation |
| | | | |
| 14313094 | | [REDACTED] | EMC Corporation |
| 14313104 | | [REDACTED] | EMC Corporation |
| 14314377 | | [REDACTED] | EMC Corporation |
| 14314378 | | [REDACTED] | EMC Corporation |
| 14314380 | | [REDACTED] | EMC Corporation |
| 14314411 | | [REDACTED] | EMC Corporation |
| 14314458 | | [REDACTED] | EMC Corporation |
| 14314523 | | [REDACTED] | EMC Corporation |
| 14315414 | | [REDACTED] | EMC Corporation |
| 14315438 | | [REDACTED] | EMC Corporation |
| 14315957 | | [REDACTED] | EMC Corporation |
| 14317002 | | [REDACTED] | EMC Corporation |
| 14317141 | | [REDACTED] | EMC Corporation |
| 14317202 | | [REDACTED] | EMC Corporation |
| 14317203 | | [REDACTED] | EMC Corporation |
| 14317328 | | [REDACTED] | EMC Corporation |
| 14317455 | | [REDACTED] | EMC Corporation |
| 14318068 | 9282094 | TRANSPARENT ADAPTIVE AUTHENTICATION AND TRANSACTION MONITORING | EMC Corporation |
| 14318805 | | APPLICATION AND INFORMATION MOVEMENT IN A CLOUD ENVIRONMENT | EMC Corporation |
| 14318831 | | CLOUDBOOK | EMC Corporation |
| 14318856 | | [REDACTED] | EMC Corporation |
| 14318939 | | [REDACTED] | EMC Corporation |
| 14318987 | 9356968 | MANAGING AUTHENTICATION USING COMMON AUTHENTICATION FRAMEWORK CIRCUITRY | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14319040 | 9378136 | TECHNIQUES FOR SELECTING WRITE ENDURANCE CLASSIFICATION OF FLASH STORAGE BASED ON READ-WRITE MIXTURE OF I/O WORKLOAD | EMC Corporation |
| 14319054 | | [REDACTED] | EMC Corporation |
| 14319084 | 9348761 | WEIGHTED-VALUE CONSISTENT HASHING FOR BALANCING DEVICE WEAR | EMC Corporation |
| 14319113 | | [REDACTED] | EMC Corporation |
| 14319117 | | [REDACTED] | EMC Corporation |
| 14319124 | | [REDACTED] | EMC Corporation |
| 14319128 | | [REDACTED] | EMC Corporation |
| 14319175 | | [REDACTED] | EMC Corporation |
| 14319183 | | [REDACTED] | EMC Corporation |
| 14319205 | | [REDACTED] | EMC Corporation |
| 14319213 | 9300661 | METHOD, APPARATUS, AND COMPUTER PROGRAM PRODUCT FOR DETERMINING WHETHER TO SUSPEND AUTHENTICATION BY AN AUTHENTICATION DEVICE | EMC Corporation |
| 14319249 | | [REDACTED] | EMC Corporation |
| 14319272 | | [REDACTED] | EMC Corporation |
| 14319334 | | [REDACTED] | EMC Corporation |
| 14319348 | | [REDACTED] | EMC Corporation |
| 14319349 | | [REDACTED] | EMC Corporation |
| 14319396 | | [REDACTED] | EMC Corporation |
| 14319440 | | [REDACTED] | EMC Corporation |
| 14319566 | | [REDACTED] | EMC Corporation |
| 14319590 | 9092754 | MOBILE SCANNING FOR INVENTORY MANAGEMENT | EMC Corporation |
| 14319602 | | [REDACTED] | EMC Corporation |
| 14319622 | | [REDACTED] | EMC Corporation |
| 14319634 | | [REDACTED] | EMC Corporation |
| 14319645 | | [REDACTED] | EMC Corporation |
| 14319646 | | [REDACTED] | EMC Corporation |
| 14319652 | | [REDACTED] | EMC Corporation |
| 14319660 | | [REDACTED] | EMC Corporation |
| 14319677 | 9225738 | MARKOV BEHAVIOR SCORING | EMC Corporation |
| 14319739 | | [REDACTED] | EMC Corporation |
| 14319757 | | [REDACTED] | EMC Corporation |
| 14319764 | | [REDACTED] | EMC Corporation |
| 14319772 | | [REDACTED] | EMC Corporation |
| 14319777 | | [REDACTED] | EMC Corporation |
| 14319797 | | [REDACTED] | EMC Corporation |
| 14319804 | | [REDACTED] | EMC Corporation |
| | | | |
| 14319854 | | [REDACTED] | EMC Corporation |
| 14319889 | | SOFTWARE OVERLAYS FOR DISAGGREGATED COMPONENTS | EMC Corporation |
| 14319991 | | [REDACTED] | EMC Corporation |
| 14319998 | | [REDACTED] | EMC Corporation |
| 14320001 | | CONTENT FABRIC FOR A DISTRIBUTED FILE SYSTEM | EMC Corporation |
| 14320069 | | DYNAMICALLY COMPOSED COMPUTE NODES COMPRISING DISAGGREGATED COMPONENTS | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| | | | |
| 14320216 | | [REDACTED] | EMC Corporation |
| 14320230 | | [REDACTED] | EMC Corporation |
| 14320265 | | [REDACTED] | EMC Corporation |
| 14320311 | | [REDACTED] | EMC Corporation |
| 14320321 | | [REDACTED] | EMC Corporation |
| 14320476 | | [REDACTED] | EMC Corporation |
| 14320551 | | [REDACTED] | EMC Corporation |
| 14325516 | | [REDACTED] | EMC Corporation |
| 14325690 | | [REDACTED] | EMC Corporation |
| 14325977 | | [REDACTED] | EMC Corporation |
| 14325980 | | [REDACTED] | EMC Corporation |
| 14326082 | | [REDACTED] | EMC Corporation |
| 14327699 | | [REDACTED] | EMC Corporation |
| 14328930 | | [REDACTED] | EMC Corporation |
| 14332434 | 9344501 | COMMUNICATION WITH MULTIPLE STORAGE PROCESSORS USING NETWORK INFRASTRUCTURE. | EMC Corporation |
| 14332552 | | [REDACTED] | EMC Corporation |
| 14334327 | | [REDACTED] | EMC Corporation |
| 14335239 | | [REDACTED] | EMC Corporation |
| 14338775 | 9235479 | DISTRIBUTED FILE SYSTEM HAVING SEPARATE DATA AND METADATA AND PROVIDING A CONSISTENT SNAPSHOT THEREOF | EMC Corporation |
| 14339392 | 9025602 | DATA REDISTRIBUTION IN DATA REPLICATION SYSTEMS | EMC Corporation |
| 14340358 | 8953265 | METHOD AND SYSTEM FOR MONITORING DISK RELIABILITY WITH GLOBAL DISK SCRUBBING | EMC Corporation |
| 14341669 | | [REDACTED] | EMC Corporation |
| 14347729 | | RESOURCE PROVISIONING BASED ON LOGICAL PROFILES AND OBJECTIVE FUNCTIONS | EMC Corporation |
| 14369091 | | FLEXIBLE LICENSING ARCHITECTURE | EMC Corporation |
| 14369093 | | DYNAMIC MALICIOUS APPLICATION DETECTION IN STORAGE SYSTEMS | EMC Corporation |
| 14410295 | | [REDACTED] | EMC Corporation |
| 14410299 | | [REDACTED] | EMC Corporation |
| 14451665 | 9083734 | INTEGRATED FORENSICS PLATFORM FOR ANALYZING IT RESOURCES CONSUMED TO DERIVE OPERATIONAL AND ARCHITECTURAL RECOMMENDATIONS | EMC Corporation |
| 14451795 | | [REDACTED] | EMC Corporation |
| 14451839 | 9118663 | AGILE OTP GENERATION | EMC Corporation |
| 14454086 | | SYSTEM AND METHOD FOR SECURE MULTI-TENANCY IN AN OPERATING SYSTEM OF A STORAGE SYSTEM | EMC Corporation |
| 14457240 | 9268658 | FAILOVER TO BACKUP SITE IN CONNECTION WITH TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |
| | | | |
| 14463402 | 9268778 | EFFICIENT BACKUP OF VIRTUAL DATA | EMC Corporation |
| 14466200 | | FILE DELETION DETECTION IN KEY VALUE DATABASES FOR VIRTUAL BACKUPS | EMC Corporation |
| 14466745 | | DATA REPLICATION WITH DELTA COMPRESSION | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14466756 | | EFFICIENT DATA REHYDRATION | EMC Corporation |
| 14466950 | | [REDACTED] | EMC Corporation |
| 14468084 | 9336157 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 14471540 | | [REDACTED] | EMC Corporation |
| 14472209 | 9367549 | VIRTUAL PRIVATE CLOUD THAT PROVIDES ENTERPRISE GRADE FUNCTIONALITY AND COMPLIANCE | EMC Corporation |
| 14473243 | 9378149 | METHOD AND SYSTEM FOR TRACKING MODIFICATION TIMES OF DATA IN A STORAGE SYSTEM | EMC Corporation |
| 14473325 | | METHOD AND SYSTEM FOR GARBAGE COLLECTION IN A STORAGE SYSTEM BASED ON LONGEVITY OF STORED DATA | EMC Corporation |
| 14474576 | | [REDACTED] | EMC Corporation |
| 14474755 | 9262280 | AGE-OUT SELECTION IN HASH CACHES | EMC Corporation |
| 14475835 | | [REDACTED] | EMC Corporation |
| 14477152 | 9361447 | AUTHENTICATION BASED ON USER-SELECTED IMAGE OVERLAY EFFECTS | EMC Corporation |
| 14478677 | 9098204 | SYSTEM AND METHOD FOR IMPROVING CACHE PERFORMANCE | EMC Corporation |
| 14483249 | 9372775 | METHOD AND APPARATUS FOR PROVIDING AT RISK INFORMATION IN A CLOUD COMPUTING SYSTEM HAVING REDUNDANCY | EMC Corporation |
| 14484861 | | SYSTEM AND METHOD FOR PREDICTING MEMORY PERFORMANCE | EMC Corporation |
| 14484945 | | [REDACTED] | EMC Corporation |
| 14487159 | | [REDACTED] | EMC Corporation |
| 14487520 | | [REDACTED] | EMC Corporation |
| 14488000 | | [REDACTED] | EMC Corporation |
| 14488072 | 9279754 | METHOD AND APPARATUS FOR TESTING A CABLE | EMC Corporation |
| 14488278 | 9141172 | METHOD AND APPARATUS TO CONTROL AND MANAGE A POWER STATE IN A RELATED SET OF STORAGE DEVICES | EMC Corporation |
| 14488377 | 9380076 | ACCESS MANAGEMENT SYSTEM | EMC Corporation |
| 14489004 | | TROUBLESHOOTING BASED ON LOG SIMILARITY | EMC Corporation |
| 14489295 | | [REDACTED] | EMC Corporation |
| 14489317 | | [REDACTED] | EMC Corporation |
| 14489363 | | [REDACTED] | EMC Corporation |
| 14490756 | | [REDACTED] | EMC Corporation |
| 14491151 | | [REDACTED] | EMC Corporation |
| 14491400 | | [REDACTED] | EMC Corporation |
| 14492185 | 9007706 | DISK SYNCHRONIZING | EMC Corporation |
| 14492241 | | [REDACTED] | EMC Corporation |
| 14492506 | | [REDACTED] | EMC Corporation |
| 14493616 | | [REDACTED] | EMC Corporation |
| 14494895 | | [REDACTED] | EMC Corporation |
| 14494899 | 9304889 | SUSPENDING DATA REPLICATION | EMC Corporation |
| 14495379 | | REMOVING CACHED DATA | EMC Corporation |
| 14496119 | | [REDACTED] | EMC Corporation |
| 14496441 | | [REDACTED] | EMC Corporation |
| 14496783 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14496795 | | [REDACTED] | EMC Corporation |
| 14497224 | | [REDACTED] | EMC Corporation |
| 14497737 | | [REDACTED] | EMC Corporation |
| 14497811 | | [REDACTED] | EMC Corporation |
| 14497814 | | [REDACTED] | EMC Corporation |
| 14498093 | | [REDACTED] | EMC Corporation |
| 14499429 | | [REDACTED] | EMC Corporation |
| 14499499 | | [REDACTED] | EMC Corporation |
| 14499551 | | [REDACTED] | EMC Corporation |
| 14499569 | | [REDACTED] | EMC Corporation |
| 14500032 | | [REDACTED] | EMC Corporation |
| 14500050 | | [REDACTED] | EMC Corporation |
| 14500135 | | [REDACTED] | EMC Corporation |
| 14500247 | | [REDACTED] | EMC Corporation |
| 14500471 | | [REDACTED] | EMC Corporation |
| 14500485 | | [REDACTED] | EMC Corporation |
| 14500524 | 9047229 | SYSTEM AND METHOD FOR PROTECTING CONTENT | EMC Corporation |
| 14500595 | | [REDACTED] | EMC Corporation |
| 14500872 | | [REDACTED] | EMC Corporation |
| 14501096 | | [REDACTED] | EMC Corporation |
| 14501104 | | [REDACTED] | EMC Corporation |
| 14501112 | | [REDACTED] | EMC Corporation |
| 14501245 | | [REDACTED] | EMC Corporation |
| 14501325 | | [REDACTED] | EMC Corporation |
| 14501407 | 9378200 | AUTOMATED CONTENT INFERENCE SYSTEM FOR UNSTRUCTURED TEXT DATA | EMC Corporation |
| 14501415 | | [REDACTED] | EMC Corporation |
| 14501431 | | [REDACTED] | EMC Corporation |
| 14501455 | | [REDACTED] | EMC Corporation |
| 14501474 | | [REDACTED] | EMC Corporation |
| 14501485 | | [REDACTED] | EMC Corporation |
| 14501502 | | [REDACTED] | EMC Corporation |
| 14501518 | | [REDACTED] | EMC Corporation |
| 14501522 | | [REDACTED] | EMC Corporation |
| 14501531 | | [REDACTED] | EMC Corporation |
| 14501533 | | [REDACTED] | EMC Corporation |
| 14501700 | | [REDACTED] | EMC Corporation |
| 14501756 | | [REDACTED] | EMC Corporation |
| 14501763 | | CLOUD CONSISTENCY TECHNOLOGY | EMC Corporation |
| 14501806 | | [REDACTED] | EMC Corporation |
| 14501808 | | LEVELING IO | EMC Corporation |
| 14501855 | | [REDACTED] | EMC Corporation |
| 14501881 | | [REDACTED] | EMC Corporation |
| 14501891 | | [REDACTED] | EMC Corporation |
| 14501892 | | [REDACTED] | EMC Corporation |
| 14501904 | | [REDACTED] | EMC Corporation |
| 14501911 | | [REDACTED] | EMC Corporation |
| 14501917 | | METHOD AND SYSTEM FOR IMPROVING FLASH STORAGE UTILIZATION BY PREDICTING BAD M-PAGES | EMC Corporation |
| 14501919 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14501928 | | [REDACTED] | EMC Corporation |
| 14501939 | | [REDACTED] | EMC Corporation |
| 14501951 | | [REDACTED] | EMC Corporation |
| 14501958 | | [REDACTED] | EMC Corporation |
| 14501987 | | [REDACTED] | EMC Corporation |
| 14502020 | | [REDACTED] | EMC Corporation |
| | | | |
| 14502036 | | [REDACTED] | EMC Corporation |
| | | | |
| | | | |
| | | | |
| | | | |
| 14502177 | 9367395 | MANAGING DATA INCONSISTENCIES IN STORAGE SYSTEMS | EMC Corporation |
| | | | |
| | | | |
| 14502244 | | [REDACTED] | EMC Corporation |
| | | | |
| 14502250 | | [REDACTED] | EMC Corporation |
| | | | |
| 14502289 | | [REDACTED] | EMC Corporation |
| | | | |
| 14502327 | | METHOD AND APPARATUS FOR COST-BASED LOAD BALANCING FOR PORT SELECTION | EMC Corporation |
| | | | |
| 14502491 | | [REDACTED] | EMC Corporation |
| 14502518 | | [REDACTED] | EMC Corporation |
| 14502543 | | [REDACTED] | EMC Corporation |
| 14502574 | | [REDACTED] | EMC Corporation |
| 14502614 | | [REDACTED] | EMC Corporation |
| 14503319 | | [REDACTED] | EMC Corporation |
| 14503331 | | [REDACTED] | EMC Corporation |
| 14507655 | | PERFORMANCE IMPROVEMENT OF A CAPACITY OPTIMIZED STORAGE SYSTEM INCLUDING A DETERMINER | EMC Corporation |
| 14510363 | | [REDACTED] | EMC Corporation |
| 14510737 | | [REDACTED] | EMC Corporation |
| 14510750 | | [REDACTED] | EMC Corporation |
| | | | |
| 14521086 | | [REDACTED] | EMC Corporation |
| 14523466 | | [REDACTED] | EMC Corporation |
| 14524188 | | [REDACTED] | EMC Corporation |
| 14529041 | 9390179 | FEDERATED SEARCH | EMC Corporation |
| 14530061 | 9325733 | UNSUPERVISED AGGREGATION OF SECURITY RULES | EMC Corporation |
| 14533437 | | [REDACTED] | EMC Corporation |
| 14534416 | | [REDACTED] | EMC Corporation |
| | | | |
| 14538089 | | [REDACTED] | EMC Corporation |
| 14538494 | 9374920 | LOCKING/INDICATION SYSTEM | EMC Corporation |
| 14547386 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14551496 | 9118565 | HARDWARE METHOD FOR DETECTING TIMEOUT CONDITIONS IN A LARGE NUMBER OF DATA CONNECTIONS | EMC Corporation |
| 14554492 | | [REDACTED] | EMC Corporation |
| 14557559 | 9332024 | UTILIZING DIGITAL LINEAR RECURSIVE FILTERS TO ESTIMATE STATISTICS FOR ANOMALY DETECTION | EMC Corporation |
| 14558619 | | [REDACTED] | EMC Corporation |
| 14558620 | | [REDACTED] | EMC Corporation |
| 14558624 | | [REDACTED] | EMC Corporation |
| 14558626 | | [REDACTED] | EMC Corporation |
| 14559031 | | [REDACTED] | EMC Corporation |
| 14559036 | | [REDACTED] | EMC Corporation |
| 14561640 | | [REDACTED] | EMC Corporation |
| 14562229 | | [REDACTED] | EMC Corporation |
| 14564420 | | [REDACTED] | EMC Corporation |
| 14564971 | | [REDACTED] | EMC Corporation |
| 14565739 | | [REDACTED] | EMC Corporation |
| 14567669 | | [REDACTED] | EMC Corporation |
| | | | |
| 14568740 | | CONFIGURING A DATA CENTER | EMC Corporation |
| 14569526 | | VIRTUAL MACHINE DISASTER RECOVERY | EMC Corporation |
| | | | |
| | | | |
| 14572027 | | [REDACTED] | EMC Corporation |
| 14572457 | | POST BACKUP CATALOGS | EMC Corporation |
| 14572899 | | [REDACTED] | EMC Corporation |
| 14573213 | | [REDACTED] | EMC Corporation |
| 14573228 | | VIRTUALIZATION IN A STORAGE AREA NETWORK | EMC Corporation |
| 14573320 | | [REDACTED] | EMC Corporation |
| 14575056 | | [REDACTED] | EMC Corporation |
| 14575079 | | [REDACTED] | EMC Corporation |
| 14575080 | | [REDACTED] | EMC Corporation |
| 14575295 | | [REDACTED] | EMC Corporation |
| 14576040 | | [REDACTED] | EMC Corporation |
| 14576060 | | [REDACTED] | EMC Corporation |
| 14576193 | | [REDACTED] | EMC Corporation |
| 14576450 | | [REDACTED] | EMC Corporation |
| 14576887 | | [REDACTED] | EMC Corporation |
| 14576899 | | [REDACTED] | EMC Corporation |
| 14576921 | | METHOD AND SYSTEM TO SEARCH LOGS THAT CONTAIN A MASSIVE NUMBER OF ENTRIES | EMC Corporation |
| 14576931 | | [REDACTED] | EMC Corporation |
| 14576943 | | [REDACTED] | EMC Corporation |
| 14576952 | | [REDACTED] | EMC Corporation |
| 14577206 | | [REDACTED] | EMC Corporation |
| 14577387 | | [REDACTED] | EMC Corporation |
| 14577469 | | [REDACTED] | EMC Corporation |
| 14578113 | | [REDACTED] | EMC Corporation |
| 14578151 | | [REDACTED] | EMC Corporation |
| 14578162 | | [REDACTED] | EMC Corporation |
| 14578168 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14578172 | | [REDACTED] | EMC Corporation |
| 14578310 | | [REDACTED] | EMC Corporation |
| 14578411 | | [REDACTED] | EMC Corporation |
| 14578582 | | [REDACTED] | EMC Corporation |
| 14578663 | | [REDACTED] | EMC Corporation |
| 14578902 | | [REDACTED] | EMC Corporation |
| 14579195 | | [REDACTED] | EMC Corporation |
| 14579209 | | [REDACTED] | EMC Corporation |
| 14579288 | | [REDACTED] | EMC Corporation |
| 14579949 | | [REDACTED] | EMC Corporation |
| 14579996 | | USING VERSIONING TO BACK UP MULTIPLE VERSIONS OF A STORED OBJECT | EMC Corporation |
| 14580304 | | [REDACTED] | EMC Corporation |
| 14580531 | | [REDACTED] | EMC Corporation |
| 14580865 | | [REDACTED] | EMC Corporation |
| 14580956 | | [REDACTED] | EMC Corporation |
| 14581201 | | [REDACTED] | EMC Corporation |
| 14581224 | | [REDACTED] | EMC Corporation |
| 14581392 | | INCLUDING KERNEL OBJECT INFORMATION IN A USER DUMP | EMC Corporation |
| 14581399 | | [REDACTED] | EMC Corporation |
| 14581409 | | [REDACTED] | EMC Corporation |
| 14581620 | | [REDACTED] | EMC Corporation |
| 14581678 | | [REDACTED] | EMC Corporation |
| 14581750 | | [REDACTED] | EMC Corporation |
| 14581901 | | [REDACTED] | EMC Corporation |
| 14581907 | | [REDACTED] | EMC Corporation |
| 14582334 | | [REDACTED] | EMC Corporation |
| 14583857 | | [REDACTED] | EMC Corporation |
| 14584028 | | [REDACTED] | EMC Corporation |
| 14584341 | | [REDACTED] | EMC Corporation |
| 14584464 | | [REDACTED] | EMC Corporation |
| 14585258 | | [REDACTED] | EMC Corporation |
| 14585259 | | [REDACTED] | EMC Corporation |
| 14585595 | | [REDACTED] | EMC Corporation |
| 14585810 | | [REDACTED] | EMC Corporation |
| 14585939 | | [REDACTED] | EMC Corporation |
| | | | |
| 14585992 | | [REDACTED] | EMC Corporation |
| 14586001 | | [REDACTED] | EMC Corporation |
| 14586053 | | [REDACTED] | EMC Corporation |
| 14586128 | | [REDACTED] | EMC Corporation |
| 14586165 | | [REDACTED] | EMC Corporation |
| 14586184 | | [REDACTED] | EMC Corporation |
| 14586227 | | [REDACTED] | EMC Corporation |
| | | | |
| 14586654 | | [REDACTED] | EMC Corporation |
| 14587106 | | [REDACTED] | EMC Corporation |
| 14587138 | | [REDACTED] | EMC Corporation |
| 14587187 | | [REDACTED] | EMC Corporation |
| 14587237 | | [REDACTED] | EMC Corporation |
| 14587345 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14587371 | | [REDACTED] | EMC Corporation |
| 14587654 | | [REDACTED] | EMC Corporation |
| 14587871 | | [REDACTED] | EMC Corporation |
| 14588308 | | [REDACTED] | EMC Corporation |
| 14588446 | 9336092 | SECURE DATA DEDUPLICATION | EMC Corporation |
| 14594011 | | [REDACTED] | EMC Corporation |
| 14597501 | | [REDACTED] | EMC Corporation |
| 14604689 | | EFFICIENT BACKUP REPLICATION | EMC Corporation |
| 14604690 | 9298759 | SMART CONTAINERS | EMC Corporation |
| 14606675 | | OPTIMIZED RECOVERY | EMC Corporation |
| 14609839 | | [REDACTED] | EMC Corporation |
| 14609889 | | [REDACTED] | EMC Corporation |
| 14609902 | | [REDACTED] | EMC Corporation |
| 14610191 | | [REDACTED] | EMC Corporation |
| 14612681 | 9244618 | TECHNIQUES FOR STORING DATA ON DISK DRIVES PARTITIONED INTO TWO REGIONS | EMC Corporation |
| 14614011 | | [REDACTED] | EMC Corporation |
| 14615608 | | [REDACTED] | EMC Corporation |
| 14616465 | | EFFICIENT CONFLICT RESOLUTION AMONG STATELESS PROCESSES | EMC Corporation |
| 14619157 | | [REDACTED] | EMC Corporation |
| 14619274 | | [REDACTED] | EMC Corporation |
| 14620631 | 9063910 | DATA RECOVERY AFTER TRIPLE DISK FAILURE | EMC Corporation |
| 14622593 | | METADATA GENERATION FOR INCREMENTAL BACKUP | EMC Corporation |
| 14629573 | 9355275 | HETEROGENEOUS DATA FROM MULTIPLE SOURCES | EMC Corporation |
| 14632036 | | [REDACTED] | EMC Corporation |
| | | | |
| | | | |
| 14636515 | 9323459 | TECHNIQUES FOR DYNAMIC DATA STORAGE CONFIGURATION IN ACCORDANCE WITH AN ALLOCATION POLICY | EMC Corporation |
| 14640444 | | [REDACTED] | EMC Corporation |
| 14641201 | | MULTIPROCESSOR SYSTEM WITH INDEPENDENT DIRECT ACCESS TO BULK SOLID STATE MEMORY RESOURCES | EMC Corporation |
| 14641799 | | [REDACTED] | EMC Corporation |
| 14643206 | | [REDACTED] | EMC Corporation |
| 14644475 | | [REDACTED] | EMC Corporation |
| 14644482 | | [REDACTED] | EMC Corporation |
| 14646422 | | [REDACTED] | EMC Corporation |
| 14657286 | | [REDACTED] | EMC Corporation |
| 14660638 | | [REDACTED] | EMC Corporation |
| 14661604 | | [REDACTED] | EMC Corporation |
| 14661636 | | [REDACTED] | EMC Corporation |
| 14662372 | | [REDACTED] | EMC Corporation |
| 14662377 | | [REDACTED] | EMC Corporation |
| 14662385 | | [REDACTED] | EMC Corporation |
| 14662887 | | [REDACTED] | EMC Corporation |
| | | | |
| 14664618 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14665110 | | [REDACTED] | EMC Corporation |
| 14665276 | | [REDACTED] | EMC Corporation |
| 14666176 | | [REDACTED] | EMC Corporation |
| 14666653 | | [REDACTED] | EMC Corporation |
| 14666980 | | [REDACTED] | EMC Corporation |
| 14667268 | | [REDACTED] | EMC Corporation |
| 14667853 | | [REDACTED] | EMC Corporation |
| 14668818 | | [REDACTED] | EMC Corporation |
| 14669223 | | [REDACTED] | EMC Corporation |
| 14669377 | | [REDACTED] | EMC Corporation |
| 14669437 | | RELOCATING DATA BETWEEN STORAGE ARRAYS | EMC Corporation |
| 14669444 | | SCALE-OUT STORAGE IN A VIRTUALIZED STORAGE SYSTEM | EMC Corporation |
| 14669534 | | [REDACTED] | EMC Corporation |
| 14669554 | | [REDACTED] | EMC Corporation |
| 14669896 | | POWER MANAGEMENT | EMC Corporation |
| 14669900 | | FACILITATING MANAGEMENT OF RESOURCES | EMC Corporation |
| 14670544 | | [REDACTED] | EMC Corporation |
| 14670593 | | [REDACTED] | EMC Corporation |
| 14670718 | | [REDACTED] | EMC Corporation |
| 14670810 | | [REDACTED] | EMC Corporation |
| 14670901 | | [REDACTED] | EMC Corporation |
| 14670909 | | [REDACTED] | EMC Corporation |
| 14670976 | | [REDACTED] | EMC Corporation |
| 14671017 | | [REDACTED] | EMC Corporation |
| 14671024 | | [REDACTED] | EMC Corporation |
| | | | |
| | | | |
| 14671318 | | [REDACTED] | EMC Corporation |
| | | | |
| 14671513 | | [REDACTED] | EMC Corporation |
| 14671578 | | [REDACTED] | EMC Corporation |
| 14671654 | | [REDACTED] | EMC Corporation |
| 14671670 | | [REDACTED] | EMC Corporation |
| 14671675 | | [REDACTED] | EMC Corporation |
| 14671740 | | [REDACTED] | EMC Corporation |
| 14671948 | | [REDACTED] | EMC Corporation |
| 14672347 | | [REDACTED] | EMC Corporation |
| 14672410 | | [REDACTED] | EMC Corporation |
| 14672526 | | [REDACTED] | EMC Corporation |
| 14672560 | | [REDACTED] | EMC Corporation |
| 14672577 | | [REDACTED] | EMC Corporation |
| 14672640 | | [REDACTED] | EMC Corporation |
| 14672652 | | [REDACTED] | EMC Corporation |
| 14672741 | | [REDACTED] | EMC Corporation |
| 14672841 | | [REDACTED] | EMC Corporation |
| 14672849 | | [REDACTED] | EMC Corporation |
| 14672889 | | DYNAMIC STORAGE TIERING | EMC Corporation |
| 14672913 | | ACCESSING DATA | EMC Corporation |
| 14672921 | | MONITORING HEALTH CONDITION OF A HARD DISK | EMC Corporation |
| 14672983 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14673017 | | [REDACTED] | EMC Corporation |
| 14673052 | | [REDACTED] | EMC Corporation |
| 14673071 | | [REDACTED] | EMC Corporation |
| 14673073 | | [REDACTED] | EMC Corporation |
| 14673103 | | [REDACTED] | EMC Corporation |
| 14673284 | | [REDACTED] | EMC Corporation |
| 14673310 | | [REDACTED] | EMC Corporation |
| 14673317 | | [REDACTED] | EMC Corporation |
| 14673382 | | [REDACTED] | EMC Corporation |
| 14673415 | | [REDACTED] | EMC Corporation |
| 14673441 | | [REDACTED] | EMC Corporation |
| 14673464 | | [REDACTED] | EMC Corporation |
| | | | |
| 14673503 | | [REDACTED] | EMC Corporation |
| 14673531 | | [REDACTED] | EMC Corporation |
| 14673594 | | [REDACTED] | EMC Corporation |
| 14673618 | | [REDACTED] | EMC Corporation |
| 14673662 | | [REDACTED] | EMC Corporation |
| 14673686 | | [REDACTED] | EMC Corporation |
| 14673706 | | [REDACTED] | EMC Corporation |
| 14673715 | | [REDACTED] | EMC Corporation |
| 14673913 | | [REDACTED] | EMC Corporation |
| 14673963 | | [REDACTED] | EMC Corporation |
| 14673980 | | [REDACTED] | EMC Corporation |
| 14673983 | | [REDACTED] | EMC Corporation |
| 14673998 | | [REDACTED] | EMC Corporation |
| 14674018 | | [REDACTED] | EMC Corporation |
| 14674066 | | [REDACTED] | EMC Corporation |
| 14674078 | | [REDACTED] | EMC Corporation |
| 14674087 | | [REDACTED] | EMC Corporation |
| 14674121 | | [REDACTED] | EMC Corporation |
| 14674128 | | [REDACTED] | EMC Corporation |
| 14674131 | | [REDACTED] | EMC Corporation |
| 14674134 | | [REDACTED] | EMC Corporation |
| 14674153 | | [REDACTED] | EMC Corporation |
| 14674233 | | [REDACTED] | EMC Corporation |
| 14674241 | | [REDACTED] | EMC Corporation |
| 14674265 | | [REDACTED] | EMC Corporation |
| 14674308 | | [REDACTED] | EMC Corporation |
| 14674314 | | [REDACTED] | EMC Corporation |
| 14674324 | | [REDACTED] | EMC Corporation |
| 14674347 | | [REDACTED] | EMC Corporation |
| 14674358 | | [REDACTED] | EMC Corporation |
| 14674382 | | [REDACTED] | EMC Corporation |
| 14674389 | | [REDACTED] | EMC Corporation |
| 14674420 | | [REDACTED] | EMC Corporation |
| 14674438 | | [REDACTED] | EMC Corporation |
| 14674450 | 9378052 | GRANTING RANGELOCKS ACCORDING TO THREAD ARRIVAL TIME | EMC Corporation |
| 14674485 | | [REDACTED] | EMC Corporation |
| 14674522 | | [REDACTED] | EMC Corporation |
| 14674556 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14674566 | | [REDACTED] | EMC Corporation |
| 14674608 | | [REDACTED] | EMC Corporation |
| 14674617 | | [REDACTED] | EMC Corporation |
| 14674647 | | [REDACTED] | EMC Corporation |
| 14674667 | | [REDACTED] | EMC Corporation |
| 14674708 | | [REDACTED] | EMC Corporation |
| 14674732 | | [REDACTED] | EMC Corporation |
| 14674738 | | [REDACTED] | EMC Corporation |
| 14674797 | | [REDACTED] | EMC Corporation |
| 14674816 | | [REDACTED] | EMC Corporation |
| 14674877 | | [REDACTED] | EMC Corporation |
| 14674896 | | [REDACTED] | EMC Corporation |
| 14674905 | | [REDACTED] | EMC Corporation |
| 14674911 | | [REDACTED] | EMC Corporation |
| 14674956 | | [REDACTED] | EMC Corporation |
| 14675131 | | [REDACTED] | EMC Corporation |
| 14675169 | | [REDACTED] | EMC Corporation |
| 14675177 | | [REDACTED] | EMC Corporation |
| 14675216 | | [REDACTED] | EMC Corporation |
| 14675396 | | [REDACTED] | EMC Corporation |
| 14675405 | | [REDACTED] | EMC Corporation |
| 14675425 | | [REDACTED] | EMC Corporation |
| 14675439 | | [REDACTED] | EMC Corporation |
| 14675440 | | [REDACTED] | EMC Corporation |
| 14676673 | | [REDACTED] | EMC Corporation |
| 14677212 | 9390100 | STORING DIFFERENCES BETWEEN PRECOMPRESSED AND RECOMPRESSED DATA FILES | EMC Corporation |
| 14677231 | | SYNCHRONIZATION OF STORAGE USING COMPARISONS OF FINGERPRINTS OF BLOCKS | EMC Corporation |
| 14677795 | | EFFICIENT BUILDING OF RESTORE LIST | EMC Corporation |
| 14677822 | | EFFICIENTLY ESTIMATING COMPRESSION RATIO IN A DEDUPLICATING FILE SYSTEM | EMC Corporation |
| | | | |
| 14686400 | | [REDACTED] | EMC Corporation |
| 14686438 | | [REDACTED] | EMC Corporation |
| 14686468 | | [REDACTED] | EMC Corporation |
| 14686650 | | [REDACTED] | EMC Corporation |
| 14686668 | | [REDACTED] | EMC Corporation |
| 14686701 | | [REDACTED] | EMC Corporation |
| 14689735 | | [REDACTED] | EMC Corporation |
| 14690771 | 9369479 | DETECTION OF MALWARE BEACONING ACTIVITIES | EMC Corporation |
| 14692905 | | [REDACTED] | EMC Corporation |
| | | | |
| 14694924 | 9350549 | SELECTIVE SHREDDING IN A DEDUPLICATION SYSTEM | EMC Corporation |
| 14695500 | | SELF-DESTRUCTING CONTENT | EMC Corporation |
| 14696708 | | METHOD AND SYSTEM FOR SECURING DATA | EMC Corporation |
| 14697116 | 9304841 | DISPATCHER FRAMEWORK TO PROVIDE INTER-APPLICATION COMMUNICATION | EMC Corporation |
| 14698047 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14699594 | | [REDACTED] | EMC Corporation |
| | | | |
| 14704774 | | SYSTEM AND METHOD FOR PROVIDING LONG-TERM STORAGE FOR DATA | EMC Corporation |
| 14705086 | | [REDACTED] | EMC Corporation |
| 14706068 | | [REDACTED] | EMC Corporation |
| 14706104 | 9235481 | CONTINUOUS DATA REPLICATION | EMC Corporation |
| 14707587 | | [REDACTED] | EMC Corporation |
| 14709894 | | [REDACTED] | EMC Corporation |
| 14710768 | 9306942 | AGILE OTP GENERATION | EMC Corporation |
| 14714726 | 9251051 | CAPACITY FORECASTING FOR BACKUP STORAGE | EMC Corporation |
| | | | |
| 14719594 | | QUERY TRANSLATION FOR SEARCHING COMPLEX STRUCTURES OF OBJECTS | EMC Corporation |
| 14721229 | | [REDACTED] | EMC Corporation |
| 14721587 | | [REDACTED] | EMC Corporation |
| 14723196 | | STREAM LOCALITY DELTA COMPRESSION | EMC Corporation |
| 14723943 | | [REDACTED] | EMC Corporation |
| 14727988 | | [REDACTED] | EMC Corporation |
| 14728787 | | [REDACTED] | EMC Corporation |
| 14729714 | | [REDACTED] | EMC Corporation |
| 14731015 | | [REDACTED] | EMC Corporation |
| 14734037 | | [REDACTED] | EMC Corporation |
| | | | |
| 14734339 | | SUBJECT AND AUDIENCE ORIENTED INSTANT COLLABORATIVE DEVELOPMENT | EMC Corporation |
| 14737286 | | [REDACTED] | EMC Corporation |
| 14737841 | | [REDACTED] | EMC Corporation |
| 14737859 | | [REDACTED] | EMC Corporation |
| 14739881 | | [REDACTED] | EMC Corporation |
| 14741627 | | [REDACTED] | EMC Corporation |
| 14741928 | | [REDACTED] | EMC Corporation |
| 14742183 | | [REDACTED] | EMC Corporation |
| 14742228 | | [REDACTED] | EMC Corporation |
| 14743152 | | [REDACTED] | EMC Corporation |
| 14743242 | | [REDACTED] | EMC Corporation |
| 14743306 | | [REDACTED] | EMC Corporation |
| 14743339 | | [REDACTED] | EMC Corporation |
| 14743358 | | [REDACTED] | EMC Corporation |
| 14743370 | | [REDACTED] | EMC Corporation |
| 14743453 | | [REDACTED] | EMC Corporation |
| 14744217 | | [REDACTED] | EMC Corporation |
| 14744268 | | [REDACTED] | EMC Corporation |
| 14744565 | | [REDACTED] | EMC Corporation |
| 14744617 | | [REDACTED] | EMC Corporation |
| 14744886 | | [REDACTED] | EMC Corporation |
| 14744921 | | [REDACTED] | EMC Corporation |
| 14745376 | | [REDACTED] | EMC Corporation |
| 14745669 | | [REDACTED] | EMC Corporation |
| 14746510 | | SYSTEM FOR DISCOVERING BUGS USING INTERVAL ALGEBRA QUERY LANGUAGE | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14746546 | | SNAPSHOTTING OF A PERFORMANCE STORAGE SYSTEM IN A SYSTEM FOR PERFORMANCE IMPROVEMENT OF A CAPACITY OPTIMIZED STORAGE SYSTEM | EMC Corporation |
| 14747119 | | [REDACTED] | EMC Corporation |
| 14747347 | | GENOMIC APPLICATION DATA STORAGE | EMC Corporation |
| 14748503 | | [REDACTED] | EMC Corporation |
| 14748556 | | [REDACTED] | EMC Corporation |
| 14748671 | | OBJECT CLASSIFICATION AND IDENTIFICATION FROM RAW DATA | EMC Corporation |
| 14748709 | | [REDACTED] | EMC Corporation |
| 14748751 | | [REDACTED] | EMC Corporation |
| 14749794 | | [REDACTED] | EMC Corporation |
| 14749818 | | [REDACTED] | EMC Corporation |
| 14749958 | | [REDACTED] | EMC Corporation |
| 14750044 | | [REDACTED] | EMC Corporation |
| 14750048 | | [REDACTED] | EMC Corporation |
| 14750441 | | [REDACTED] | EMC Corporation |
| 14751427 | | [REDACTED] | EMC Corporation |
| 14751652 | | [REDACTED] | EMC Corporation |
| 14751699 | | [REDACTED] | EMC Corporation |
| 14751702 | | [REDACTED] | EMC Corporation |
| 14751861 | | [REDACTED] | EMC Corporation |
| 14751980 | | [REDACTED] | EMC Corporation |
| 14752012 | | [REDACTED] | EMC Corporation |
| 14752018 | | [REDACTED] | EMC Corporation |
| 14752059 | | [REDACTED] | EMC Corporation |
| 14752106 | | [REDACTED] | EMC Corporation |
| 14752141 | | [REDACTED] | EMC Corporation |
| 14752153 | | [REDACTED] | EMC Corporation |
| 14752351 | | [REDACTED] | EMC Corporation |
| 14752371 | | [REDACTED] | EMC Corporation |
| 14752382 | | [REDACTED] | EMC Corporation |
| 14752397 | | [REDACTED] | EMC Corporation |
| 14752404 | | [REDACTED] | EMC Corporation |
| 14752484 | | [REDACTED] | EMC Corporation |
| 14752519 | | [REDACTED] | EMC Corporation |
| 14752530 | | [REDACTED] | EMC Corporation |
| 14752614 | | [REDACTED] | EMC Corporation |
| 14752616 | | [REDACTED] | EMC Corporation |
| 14752717 | | [REDACTED] | EMC Corporation |
| 14752766 | | [REDACTED] | EMC Corporation |
| 14752788 | | [REDACTED] | EMC Corporation |
| 14753217 | | [REDACTED] | EMC Corporation |
| 14753375 | | [REDACTED] | EMC Corporation |
| 14753389 | | [REDACTED] | EMC Corporation |
| 14753421 | | [REDACTED] | EMC Corporation |
| 14753430 | | [REDACTED] | EMC Corporation |
| 14753450 | | [REDACTED] | EMC Corporation |
| 14753452 | | [REDACTED] | EMC Corporation |
| 14753463 | | [REDACTED] | EMC Corporation |
| 14753476 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
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| 14753510 | | [REDACTED] | EMC Corporation |
| 14753561 | | [REDACTED] | EMC Corporation |
| 14753758 | | [REDACTED] | EMC Corporation |
| 14753831 | | [REDACTED] | EMC Corporation |
| 14753930 | | [REDACTED] | EMC Corporation |
| 14754065 | | [REDACTED] | EMC Corporation |
| 14754094 | | [REDACTED] | EMC Corporation |
| 14754819 | | [REDACTED] | EMC Corporation |
| 14754838 | | [REDACTED] | EMC Corporation |
| 14754865 | | [REDACTED] | EMC Corporation |
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| 14754961 | | [REDACTED] | EMC Corporation |
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| 14755001 | | [REDACTED] | EMC Corporation |
| 14755012 | | [REDACTED] | EMC Corporation |
| 14755066 | | [REDACTED] | EMC Corporation |
| 14755114 | | [REDACTED] | EMC Corporation |
| 14755130 | | [REDACTED] | EMC Corporation |
| 14755142 | | [REDACTED] | EMC Corporation |
| 14755164 | | [REDACTED] | EMC Corporation |
| 14755210 | | [REDACTED] | EMC Corporation |
| 14755248 | | [REDACTED] | EMC Corporation |
| 14755258 | | [REDACTED] | EMC Corporation |
| 14755292 | | [REDACTED] | EMC Corporation |
| 14755298 | | [REDACTED] | EMC Corporation |
| 14755311 | | [REDACTED] | EMC Corporation |
| 14755331 | | [REDACTED] | EMC Corporation |
| 14755384 | | [REDACTED] | EMC Corporation |
| 14755499 | | [REDACTED] | EMC Corporation |
| 14755517 | | [REDACTED] | EMC Corporation |
| 14755630 | | [REDACTED] | EMC Corporation |
| 14755667 | | [REDACTED] | EMC Corporation |
| 14755678 | | [REDACTED] | EMC Corporation |
| 14755706 | | [REDACTED] | EMC Corporation |
| 14755711 | | [REDACTED] | EMC Corporation |
| 14755744 | | [REDACTED] | EMC Corporation |
| 14755761 | | [REDACTED] | EMC Corporation |
| 14755789 | | [REDACTED] | EMC Corporation |
| 14755808 | | [REDACTED] | EMC Corporation |
| | | | |
| 14755849 | | [REDACTED] | EMC Corporation |
| 14755855 | | [REDACTED] | EMC Corporation |
| | | | |
| 14755914 | | [REDACTED] | EMC Corporation |
| 14755937 | | [REDACTED] | EMC Corporation |
| 14757999 | | [REDACTED] | EMC Corporation |
| 14767387 | | [REDACTED] | EMC Corporation |
| 14771703 | | [REDACTED] | EMC Corporation |
| 14771743 | | MANAGING PROVISIONING OF STORAGE RESOURCES | EMC Corporation |
| 14788071 | | [REDACTED] | EMC Corporation |
| 14788079 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
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| 14788103 | | [REDACTED] | EMC Corporation |
| 14788106 | | [REDACTED] | EMC Corporation |
| 14788129 | | [REDACTED] | EMC Corporation |
| 14788142 | | [REDACTED] | EMC Corporation |
| | | | |
| 14788184 | | [REDACTED] | EMC Corporation |
| 14788281 | | [REDACTED] | EMC Corporation |
| 14788323 | | [REDACTED] | EMC Corporation |
| 14788346 | | [REDACTED] | EMC Corporation |
| 14788362 | | [REDACTED] | EMC Corporation |
| 14788381 | | [REDACTED] | EMC Corporation |
| 14788412 | | [REDACTED] | EMC Corporation |
| 14788533 | | [REDACTED] | EMC Corporation |
| 14788543 | | [REDACTED] | EMC Corporation |
| 14788597 | | [REDACTED] | EMC Corporation |
| 14788598 | | [REDACTED] | EMC Corporation |
| 14788732 | | [REDACTED] | EMC Corporation |
| 14788755 | | [REDACTED] | EMC Corporation |
| 14788775 | | [REDACTED] | EMC Corporation |
| 14789659 | | [REDACTED] | EMC Corporation |
| 14789757 | | DATA MOVER DISCOVERY OF OBJECT EXTENT | EMC Corporation |
| 14793583 | | AUTOMATED END-TO-END SALES PROCESS OF STORAGE APPLIANCES OF STORAGE SYSTEMS USING PREDICTIVE MODELING | EMC Corporation |
| 14794708 | | ANOMALY DETECTION SYSTEM FOR ENTERPRISE NETWORK SECURITY | EMC Corporation |
| 14797058 | | [REDACTED] | EMC Corporation |
| 14801720 | | CUSTOMER CONTROLLED DATA PRIVACY PROTECTION IN PUBLIC CLOUD | EMC Corporation |
| 14808238 | | [REDACTED] | EMC Corporation |
| 14808369 | | [REDACTED] | EMC Corporation |
| 14814235 | | [REDACTED] | EMC Corporation |
| 14814474 | | [REDACTED] | EMC Corporation |
| 14819333 | | ASYNCHRONOUS MULTI-NODE FILESYSTEM COORDINATED REPLICATION | EMC Corporation |
| | | | |
| 14819920 | | [REDACTED] | EMC Corporation |
| 14820026 | | [REDACTED] | EMC Corporation |
| | | | |
| 14825724 | | [REDACTED] | EMC Corporation |
| 14825845 | | PERFORMANCE IMPROVEMENT OF A CAPACITY OPTIMIZED STORAGE SYSTEM USING A PERFORMANCE SEGMENT STORAGE SYSTEM AND A SEGMENT STORAGE SYSTEM | EMC Corporation |
| 14828851 | | [REDACTED] | EMC Corporation |
| 14829478 | | [REDACTED] | EMC Corporation |
| 14831138 | | [REDACTED] | EMC Corporation |
| 14836761 | | [REDACTED] | EMC Corporation |
| 14838940 | | [REDACTED] | EMC Corporation |
| 14840476 | | [REDACTED] | EMC Corporation |
| 14840573 | | [REDACTED] | EMC Corporation |
| 14840685 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
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| | | | |
| | | | |
| 14842720 | | EFFICIENT FILE BROWSING USING KEY VALUE DATABASES FOR VIRTUAL BACKUPS | EMC Corporation |
| 14847583 | | [REDACTED] | EMC Corporation |
| 14849938 | | [REDACTED] | EMC Corporation |
| 14850195 | | [REDACTED] | EMC Corporation |
| 14850308 | | [REDACTED] | EMC Corporation |
| 14850814 | | PARALLEL PROCESSING DATABASE TREE STRUCTURE | EMC Corporation |
| 14853437 | | [REDACTED] | EMC Corporation |
| 14854299 | | [REDACTED] | EMC Corporation |
| 14854420 | | [REDACTED] | EMC Corporation |
| 14856952 | | [REDACTED] | EMC Corporation |
| 14857894 | | [REDACTED] | EMC Corporation |
| 14858002 | | [REDACTED] | EMC Corporation |
| 14858027 | | FILE BASED INCREMENTAL BLOCK BACKUP FROM USER MODE | EMC Corporation |
| 14858376 | | [REDACTED] | EMC Corporation |
| | | | |
| 14859152 | | MULTI STREAM DEDUPLICATED BACKUP OF COLLABORATION SERVER DATA | EMC Corporation |
| 14859550 | | [REDACTED] | EMC Corporation |
| 14859559 | | [REDACTED] | EMC Corporation |
| 14860935 | | [REDACTED] | EMC Corporation |
| 14861080 | | [REDACTED] | EMC Corporation |
| 14861488 | | [REDACTED] | EMC Corporation |
| 14861624 | | [REDACTED] | EMC Corporation |
| 14861858 | | [REDACTED] | EMC Corporation |
| 14862491 | | [REDACTED] | EMC Corporation |
| 14862655 | | [REDACTED] | EMC Corporation |
| 14862855 | | [REDACTED] | EMC Corporation |
| 14863196 | | GENERATING A QR CODE | EMC Corporation |
| 14863318 | | [REDACTED] | EMC Corporation |
| 14863608 | | [REDACTED] | EMC Corporation |
| 14863783 | | [REDACTED] | EMC Corporation |
| 14863885 | | [REDACTED] | EMC Corporation |
| 14863958 | | [REDACTED] | EMC Corporation |
| 14864399 | | [REDACTED] | EMC Corporation |
| 14864425 | | [REDACTED] | EMC Corporation |
| 14865333 | | [REDACTED] | EMC Corporation |
| 14865392 | | [REDACTED] | EMC Corporation |
| 14866139 | | [REDACTED] | EMC Corporation |
| 14866270 | | [REDACTED] | EMC Corporation |
| 14867153 | | DETERMINING FAILURE LOCATION IN A STORAGE SYSTEM | EMC Corporation |
| 14867158 | | PERFORMANCE OF DE-CLUSTERED DISK ARRAY | EMC Corporation |
| 14867166 | | METHOD AND APPARATUS FOR ACCELERATING DATA RECONSTRUCTION FOR A DISK ARRAY | EMC Corporation |
| 14867389 | | [REDACTED] | EMC Corporation |
| 14867820 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14868142 | | [REDACTED] | EMC Corporation |
| 14868499 | | [REDACTED] | EMC Corporation |
| 14868512 | | [REDACTED] | EMC Corporation |
| 14868567 | | [REDACTED] | EMC Corporation |
| 14868577 | | [REDACTED] | EMC Corporation |
| 14868596 | | [REDACTED] | EMC Corporation |
| 14868618 | | [REDACTED] | EMC Corporation |
| 14868675 | | [REDACTED] | EMC Corporation |
| 14868676 | | [REDACTED] | EMC Corporation |
| 14868687 | | [REDACTED] | EMC Corporation |
| 14868693 | | [REDACTED] | EMC Corporation |
| 14868694 | | [REDACTED] | EMC Corporation |
| 14869195 | | [REDACTED] | EMC Corporation |
| 14869354 | | [REDACTED] | EMC Corporation |
| 14869431 | | [REDACTED] | EMC Corporation |
| 14869461 | | [REDACTED] | EMC Corporation |
| 14869777 | | [REDACTED] | EMC Corporation |
| 14869787 | | [REDACTED] | EMC Corporation |
| 14869960 | | [REDACTED] | EMC Corporation |
| 14870053 | | [REDACTED] | EMC Corporation |
| 14870088 | | [REDACTED] | EMC Corporation |
| 14870093 | | [REDACTED] | EMC Corporation |
| 14870116 | | [REDACTED] | EMC Corporation |
| 14870128 | | [REDACTED] | EMC Corporation |
| 14870147 | | [REDACTED] | EMC Corporation |
| 14870151 | | [REDACTED] | EMC Corporation |
| 14870159 | | [REDACTED] | EMC Corporation |
| 14870165 | | [REDACTED] | EMC Corporation |
| 14870167 | | [REDACTED] | EMC Corporation |
| 14870190 | | [REDACTED] | EMC Corporation |
| 14870218 | | [REDACTED] | EMC Corporation |
| 14870308 | | [REDACTED] | EMC Corporation |
| 14870336 | | [REDACTED] | EMC Corporation |
| 14870350 | | [REDACTED] | EMC Corporation |
| 14870407 | | [REDACTED] | EMC Corporation |
| 14870423 | | [REDACTED] | EMC Corporation |
| | | | |
| 14870462 | | [REDACTED] | EMC Corporation |
| 14870475 | | [REDACTED] | EMC Corporation |
| 14870492 | | [REDACTED] | EMC Corporation |
| 14870506 | | [REDACTED] | EMC Corporation |
| 14870514 | | [REDACTED] | EMC Corporation |
| 14870529 | | [REDACTED] | EMC Corporation |
| 14870537 | | [REDACTED] | EMC Corporation |
| 14870556 | | [REDACTED] | EMC Corporation |
| 14870565 | | [REDACTED] | EMC Corporation |
| 14870595 | | [REDACTED] | EMC Corporation |
| 14870660 | | [REDACTED] | EMC Corporation |
| 14870668 | | [REDACTED] | EMC Corporation |
| 14870709 | | [REDACTED] | EMC Corporation |
| 14870717 | | [REDACTED] | EMC Corporation |
| 14870718 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14870898 | | [REDACTED] | EMC Corporation |
| 14870899 | | [REDACTED] | EMC Corporation |
| 14870942 | | [REDACTED] | EMC Corporation |
| 14870984 | | [REDACTED] | EMC Corporation |
| 14871051 | | [REDACTED] | EMC Corporation |
| 14871109 | | [REDACTED] | EMC Corporation |
| 14871114 | | [REDACTED] | EMC Corporation |
| | | | |
| 14871160 | | [REDACTED] | EMC Corporation |
| 14871161 | | [REDACTED] | EMC Corporation |
| 14871179 | | [REDACTED] | EMC Corporation |
| 14871213 | | [REDACTED] | EMC Corporation |
| 14871231 | | [REDACTED] | EMC Corporation |
| 14871242 | | [REDACTED] | EMC Corporation |
| 14871321 | | INTERCONNECT FLOW CONTROL | EMC Corporation |
| 14871324 | | [REDACTED] | EMC Corporation |
| 14871344 | | [REDACTED] | EMC Corporation |
| 14871467 | | [REDACTED] | EMC Corporation |
| 14871529 | | [REDACTED] | EMC Corporation |
| 14871530 | | [REDACTED] | EMC Corporation |
| 14871592 | | [REDACTED] | EMC Corporation |
| 14871698 | | [REDACTED] | EMC Corporation |
| 14871749 | | [REDACTED] | EMC Corporation |
| 14871751 | | [REDACTED] | EMC Corporation |
| 14871760 | | [REDACTED] | EMC Corporation |
| 14871803 | | [REDACTED] | EMC Corporation |
| 14871909 | | [REDACTED] | EMC Corporation |
| 14872075 | | [REDACTED] | EMC Corporation |
| 14872135 | | [REDACTED] | EMC Corporation |
| 14872218 | | [REDACTED] | EMC Corporation |
| 14872233 | | [REDACTED] | EMC Corporation |
| 14872346 | | [REDACTED] | EMC Corporation |
| 14872395 | | [REDACTED] | EMC Corporation |
| 14872515 | | [REDACTED] | EMC Corporation |
| 14874020 | 9361592 | AUTOMATED DEFECT AND OPTIMIZATION DISCOVERY | EMC Corporation |
| 14874911 | | [REDACTED] | EMC Corporation |
| 14875546 | 9389964 | READ-WRITE ACCESS IN A READ-ONLY ENVIRONMENT | EMC Corporation |
| 14878921 | | CLUSTER STORAGE USING SUBSEGMENTING FOR EFFICIENT STORAGE | EMC Corporation |
| 14881055 | | UPDATING KEY VALUE DATABASES FOR VIRTUAL BACKUPS | EMC Corporation |
| 14882931 | | ENABLING NON-VOLATILE RANDOM ACCESS TO DATA | EMC Corporation |
| 14883082 | | PROCESSING AN INPUT/ OUTPUT OPERATION REQUEST | EMC Corporation |
| 14883112 | | DISK DATA MANAGEMENT | EMC Corporation |
| 14883138 | | DATA CACHE AND METHOD FOR DATA CACHING | EMC Corporation |
| 14884501 | | ASSIGNING LOCK RESOURCES TO OBJECTS | EMC Corporation |
| 14902100 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14919039 | | CLUSTER FILE SERVER PROXY SERVER FOR BACKUP AND RECOVERY | EMC Corporation |
| 14921515 | | [REDACTED] | EMC Corporation |
| 14924550 | | DYNAMIC GRAPH ANOMALY DETECTION FRAMEWORK AND SCALABLE SYSTEM ARCHITECTURE | EMC Corporation |
| 14924636 | | [REDACTED] | EMC Corporation |
| 14928986 | | [REDACTED] | EMC Corporation |
| 14929788 | | [REDACTED] | EMC Corporation |
| | | | |
| 14938692 | | SYNCHRONIZED FILE MANAGEMENT ACROSS MULTIPLE DISPARATE ENDPOINTS | EMC Corporation |
| 14939562 | | [REDACTED] | EMC Corporation |
| 14940450 | | [REDACTED] | EMC Corporation |
| 14941184 | | DECLARATIVE CLUSTER MANAGEMENT | EMC Corporation |
| | | | |
| 14949063 | | [REDACTED] | EMC Corporation |
| 14952140 | | [REDACTED] | EMC Corporation |
| 14952505 | | [REDACTED] | EMC Corporation |
| 14954043 | | [REDACTED] | EMC Corporation |
| 14954620 | | [REDACTED] | EMC Corporation |
| | | | |
| 14958469 | | [REDACTED] | EMC Corporation |
| 14960244 | | TRANSMITTING FILESYSTEM CHANGES OVER A NETWORK | EMC Corporation |
| 14960267 | | DYNAMIC PRIORITIZED RECOVERY | EMC Corporation |
| 14961763 | | [REDACTED] | EMC Corporation |
| 14961764 | | [REDACTED] | EMC Corporation |
| 14962052 | | [REDACTED] | EMC Corporation |
| 14963079 | | TRACKING FILES EXCLUDED FROM BACKUP | EMC Corporation |
| 14964498 | | [REDACTED] | EMC Corporation |
| | | | |
| 14966569 | | [REDACTED] | EMC Corporation |
| 14966613 | | [REDACTED] | EMC Corporation |
| 14966637 | | [REDACTED] | EMC Corporation |
| 14967555 | | [REDACTED] | EMC Corporation |
| 14968251 | | [REDACTED] | EMC Corporation |
| 14968360 | | COMPUTING AND OBTAINING FAULT RELATED INFORMATION | EMC Corporation |
| 14968399 | | SOFTWARE TESTING | EMC Corporation |
| 14968416 | | [REDACTED] | EMC Corporation |
| 14968421 | | [REDACTED] | EMC Corporation |
| 14968431 | | [REDACTED] | EMC Corporation |
| 14968434 | | CONTROLLING SHARING OF RESOURCE AMONG A PLURALITY OF NODES | EMC Corporation |
| 14968745 | | VIRTUAL MACHINE CAPACITY PLANNING | EMC Corporation |
| 14968773 | | SYSTEM AND METHOD FOR SMART FRAMEWORK FOR NETWORK BACKUP SOFTWARE DEBUGGING | EMC Corporation |
| 14969801 | | [REDACTED] | EMC Corporation |
| | | | |
| | | | |
| 14970903 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14970976 | | PROVIDING ACCESS TO RESOURCES | EMC Corporation |
| 14970978 | | PROCESSING TRANSACTIONS IN A SYNCHRONIZED REPLICATION SYSTEM | EMC Corporation |
| 14971006 | | QUALITY OF SERVICE SETTING | EMC Corporation |
| 14971010 | | MANAGING A PERIPHERAL COMPONENT INTERFACE EXPRESS DEVICE HOTPLUG | EMC Corporation |
| 14971036 | | ANALYZING USER BEHAVIORS | EMC Corporation |
| 14971043 | | REUSING STORAGE BLOCKS OF A FILE SYSTEM | EMC Corporation |
| 14971076 | | QUOTA BASED RESOURCE MANAGEMENT | EMC Corporation |
| 14971107 | | MANAGEMENT OF STORAGE DEVICES | EMC Corporation |
| 14971112 | | [REDACTED] | EMC Corporation |
| 14971137 | | PROVIDING STORAGE SERVICE TO TENANT IN CLOUD STORAGE ENVIRONMENT | EMC Corporation |
| 14971220 | | [REDACTED] | EMC Corporation |
| 14971249 | | [REDACTED] | EMC Corporation |
| 14971770 | | [REDACTED] | EMC Corporation |
| 14971808 | | [REDACTED] | EMC Corporation |
| 14971935 | | [REDACTED] | EMC Corporation |
| 14972377 | | [REDACTED] | EMC Corporation |
| 14972613 | | [REDACTED] | EMC Corporation |
| 14973160 | | AUTOMATICALLY TESTING FIRMWARE | EMC Corporation |
| 14973204 | | [REDACTED] | EMC Corporation |
| 14973245 | | [REDACTED] | EMC Corporation |
| 14973258 | | [REDACTED] | EMC Corporation |
| 14973281 | | [REDACTED] | EMC Corporation |
| 14973412 | | SMART MULTIMEDIA PROCESSING | EMC Corporation |
| 14973950 | | [REDACTED] | EMC Corporation |
| 14974177 | | [REDACTED] | EMC Corporation |
| 14974231 | | [REDACTED] | EMC Corporation |
| 14974286 | | [REDACTED] | EMC Corporation |
| 14974364 | | [REDACTED] | EMC Corporation |
| 14974419 | | [REDACTED] | EMC Corporation |
| 14974454 | | [REDACTED] | EMC Corporation |
| 14974462 | | [REDACTED] | EMC Corporation |
| 14974613 | | [REDACTED] | EMC Corporation |
| 14974982 | | [REDACTED] | EMC Corporation |
| 14974989 | | [REDACTED] | EMC Corporation |
| 14975072 | | [REDACTED] | EMC Corporation |
| 14975296 | | [REDACTED] | EMC Corporation |
| 14975317 | | [REDACTED] | EMC Corporation |
| | | | |
| 14975445 | | [REDACTED] | EMC Corporation |
| 14976156 | | [REDACTED] | EMC Corporation |
| 14976168 | | [REDACTED] | EMC Corporation |
| 14976325 | | [REDACTED] | EMC Corporation |
| 14976332 | | [REDACTED] | EMC Corporation |
| 14976499 | | [REDACTED] | EMC Corporation |
| 14976532 | | [REDACTED] | EMC Corporation |
| 14976719 | | [REDACTED] | EMC Corporation |
| 14976727 | | [REDACTED] | EMC Corporation |
| 14977042 | | [REDACTED] | EMC Corporation |
| 14977221 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14977960 | | [REDACTED] | EMC Corporation |
| 14978351 | | [REDACTED] | EMC Corporation |
| 14978378 | | [REDACTED] | EMC Corporation |
| 14978424 | | [REDACTED] | EMC Corporation |
| 14978444 | | [REDACTED] | EMC Corporation |
| 14978480 | | [REDACTED] | EMC Corporation |
| 14978520 | | [REDACTED] | EMC Corporation |
| 14979218 | | [REDACTED] | EMC Corporation |
| 14979453 | | [REDACTED] | EMC Corporation |
| 14979484 | | [REDACTED] | EMC Corporation |
| 14979727 | | TEXT COMPRESSION AND DECOMPRESSION | EMC Corporation |
| 14979750 | | PERFORMING CROSS-LAYER ORCHESTRATION OF RESOURCES IN DATA CENTER HAVING MULTI-LAYER ARCHITECTURE | EMC Corporation |
| 14979890 | | [REDACTED] | EMC Corporation |
| 14979897 | | [REDACTED] | EMC Corporation |
| 14979913 | | [REDACTED] | EMC Corporation |
| 14980023 | | [REDACTED] | EMC Corporation |
| 14980032 | | [REDACTED] | EMC Corporation |
| 14980037 | | [REDACTED] | EMC Corporation |
| 14980039 | | [REDACTED] | EMC Corporation |
| 14980101 | | [REDACTED] | EMC Corporation |
| 14980252 | | [REDACTED] | EMC Corporation |
| 14980479 | | [REDACTED] | EMC Corporation |
| 14980490 | | [REDACTED] | EMC Corporation |
| 14980501 | | [REDACTED] | EMC Corporation |
| 14980510 | | [REDACTED] | EMC Corporation |
| 14980676 | | [REDACTED] | EMC Corporation |
| 14980889 | | [REDACTED] | EMC Corporation |
| 14980928 | | [REDACTED] | EMC Corporation |
| 14980944 | | [REDACTED] | EMC Corporation |
| 14981560 | | [REDACTED] | EMC Corporation |
| 14981671 | | [REDACTED] | EMC Corporation |
| 14981686 | | [REDACTED] | EMC Corporation |
| 14981692 | | [REDACTED] | EMC Corporation |
| 14981695 | | [REDACTED] | EMC Corporation |
| 14981698 | | [REDACTED] | EMC Corporation |
| 14982007 | | [REDACTED] | EMC Corporation |
| 14982012 | | [REDACTED] | EMC Corporation |
| 14982020 | | [REDACTED] | EMC Corporation |
| 14982026 | | [REDACTED] | EMC Corporation |
| 14982063 | | [REDACTED] | EMC Corporation |
| 14982341 | | [REDACTED] | EMC Corporation |
| 14982351 | | [REDACTED] | EMC Corporation |
| 14982355 | | [REDACTED] | EMC Corporation |
| 14982597 | | [REDACTED] | EMC Corporation |
| 14982625 | | [REDACTED] | EMC Corporation |
| 14982639 | | [REDACTED] | EMC Corporation |
| 14982776 | | [REDACTED] | EMC Corporation |
| 14982798 | | [REDACTED] | EMC Corporation |
| 14982951 | | [REDACTED] | EMC Corporation |
| 14982963 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14982971 | | [REDACTED] | EMC Corporation |
| 14982976 | | [REDACTED] | EMC Corporation |
| 14983039 | | [REDACTED] | EMC Corporation |
| 14983203 | | [REDACTED] | EMC Corporation |
| 14983269 | | [REDACTED] | EMC Corporation |
| 14983319 | | [REDACTED] | EMC Corporation |
| 14983631 | | [REDACTED] | EMC Corporation |
| 14983666 | | [REDACTED] | EMC Corporation |
| 14983699 | | [REDACTED] | EMC Corporation |
| 14983866 | | FAILURE RECOVERY IN A STORAGE DEVICE | EMC Corporation |
| 14983914 | | [REDACTED] | EMC Corporation |
| 14983920 | | [REDACTED] | EMC Corporation |
| 14983932 | | [REDACTED] | EMC Corporation |
| 14983943 | | [REDACTED] | EMC Corporation |
| 14983952 | | [REDACTED] | EMC Corporation |
| 14983958 | | [REDACTED] | EMC Corporation |
| 14983966 | | [REDACTED] | EMC Corporation |
| 14983971 | | [REDACTED] | EMC Corporation |
| 14983981 | | [REDACTED] | EMC Corporation |
| 14983991 | | [REDACTED] | EMC Corporation |
| 14984004 | | [REDACTED] | EMC Corporation |
| 14984060 | | [REDACTED] | EMC Corporation |
| 14984063 | | [REDACTED] | EMC Corporation |
| 14984137 | | [REDACTED] | EMC Corporation |
| 14984163 | | [REDACTED] | EMC Corporation |
| 14984185 | | [REDACTED] | EMC Corporation |
| 14984192 | | PASSIVE SAN DISCOVERY | EMC Corporation |
| 14984219 | | [REDACTED] | EMC Corporation |
| 14984224 | | [REDACTED] | EMC Corporation |
| 14984279 | | [REDACTED] | EMC Corporation |
| 14984296 | | [REDACTED] | EMC Corporation |
| 14984301 | | [REDACTED] | EMC Corporation |
| 14984312 | | [REDACTED] | EMC Corporation |
| 14984317 | | [REDACTED] | EMC Corporation |
| 14984324 | | [REDACTED] | EMC Corporation |
| 14984334 | | [REDACTED] | EMC Corporation |
| 14984376 | | [REDACTED] | EMC Corporation |
| 14984502 | | RECOGNIZING HARD DISK MOVEMENT | EMC Corporation |
| 14984579 | | MONITORING TARGET OBJECT BY MULTIPLE CAMERAS | EMC Corporation |
| 14984737 | | [REDACTED] | EMC Corporation |
| 14984749 | | [REDACTED] | EMC Corporation |
| 14984824 | | [REDACTED] | EMC Corporation |
| 14984864 | | [REDACTED] | EMC Corporation |
| 14985518 | | [REDACTED] | EMC Corporation |
| 14985612 | | [REDACTED] | EMC Corporation |
| 14985656 | | [REDACTED] | EMC Corporation |
| 14985706 | | [REDACTED] | EMC Corporation |
| 14985735 | | [REDACTED] | EMC Corporation |
| 14985749 | | [REDACTED] | EMC Corporation |
| 14985769 | | [REDACTED] | EMC Corporation |
| 14986066 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 14986276 | | [REDACTED] | EMC Corporation |
| 14986309 | | [REDACTED] | EMC Corporation |
| 14992099 | | [REDACTED] | EMC Corporation |
| 14994734 | | EFFICIENT BACKUP OF VIRTUAL DATA | EMC Corporation |
| | | | |
| 14997980 | | AUTOMATED DEFECT DIAGNOSIS FROM MACHINE DIAGNOSTIC DATA | EMC Corporation |
| 14998102 | | [REDACTED] | EMC Corporation |
| 14998112 | | [REDACTED] | EMC Corporation |
| 14998139 | | [REDACTED] | EMC Corporation |
| 14998374 | | [REDACTED] | EMC Corporation |
| 15000709 | | BLOCK BASED INCREMENTAL BACKUP FROM USER MODE | EMC Corporation |
| 15001784 | | [REDACTED] | EMC Corporation |
| 15001789 | | [REDACTED] | EMC Corporation |
| | | | |
| 15004800 | | SEGMENT DEDUPLICATION SYSTEM WITH ENCRYPTION AND COMPRESSION OF SEGMENTS | EMC Corporation |
| 15005810 | | [REDACTED] | EMC Corporation |
| 15005817 | | [REDACTED] | EMC Corporation |
| 15007087 | | EFFICIENT STORAGE TIERING | EMC Corporation |
| 15042022 | | [REDACTED] | EMC Corporation |
| | | | |
| | | | |
| 15056072 | | [REDACTED] | EMC Corporation |
| 15056115 | | [REDACTED] | EMC Corporation |
| 15056439 | | [REDACTED] | EMC Corporation |
| 15057631 | | [REDACTED] | EMC Corporation |
| 15057849 | | [REDACTED] | EMC Corporation |
| 15059011 | | [REDACTED] | EMC Corporation |
| 15064183 | | PRIVACY SCREEN-BASED SECURITY | EMC Corporation |
| 15064314 | | [REDACTED] | EMC Corporation |
| 15064829 | | [REDACTED] | EMC Corporation |
| 15065353 | | [REDACTED] | EMC Corporation |
| 15066221 | | [REDACTED] | EMC Corporation |
| 15066235 | | [REDACTED] | EMC Corporation |
| 15066291 | | [REDACTED] | EMC Corporation |
| 15067489 | | ASSURED FEDERATED RECORDS MANAGEMENT | EMC Corporation |
| 15067564 | | [REDACTED] | EMC Corporation |
| 15069283 | | [REDACTED] | EMC Corporation |
| 15070450 | | [REDACTED] | EMC Corporation |
| 15071009 | | METHOD TO INPUT CONTENT IN A STRUCTURED MANNER WITH REAL-TIME ASSISTANCE AND VALIDATION | EMC Corporation |
| 15071311 | | [REDACTED] | EMC Corporation |
| 15071862 | | [REDACTED] | EMC Corporation |
| 15072981 | | [REDACTED] | EMC Corporation |
| 15073944 | | [REDACTED] | EMC Corporation |
| 15074037 | | [REDACTED] | EMC Corporation |
| 15074063 | | FRAMEWORK FOR CALCULATING GROUPED OPTIMIZATION ALGORITHMS WITHIN A DISTRIBUTED DATA STORE | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 15075038 | | [REDACTED] | EMC Corporation |
| 15075887 | | [REDACTED] | EMC Corporation |
| 15076034 | | [REDACTED] | EMC Corporation |
| 15076224 | | [REDACTED] | EMC Corporation |
| 15076775 | | [REDACTED] | EMC Corporation |
| 15076946 | | [REDACTED] | EMC Corporation |
| 15077179 | | [REDACTED] | EMC Corporation |
| 15077183 | | [REDACTED] | EMC Corporation |
| 15077184 | | [REDACTED] | EMC Corporation |
| 15077372 | | [REDACTED] | EMC Corporation |
| 15078375 | | [REDACTED] | EMC Corporation |
| 15078672 | | [REDACTED] | EMC Corporation |
| 15078688 | | [REDACTED] | EMC Corporation |
| 15079197 | | [REDACTED] | EMC Corporation |
| 15079208 | | [REDACTED] | EMC Corporation |
| 15079219 | | [REDACTED] | EMC Corporation |
| 15079228 | | [REDACTED] | EMC Corporation |
| 15079896 | | [REDACTED] | EMC Corporation |
| 15080437 | | [REDACTED] | EMC Corporation |
| 15080448 | | [REDACTED] | EMC Corporation |
| 15080483 | | [REDACTED] | EMC Corporation |
| 15080490 | | [REDACTED] | EMC Corporation |
| 15080495 | | [REDACTED] | EMC Corporation |
| 15080499 | | [REDACTED] | EMC Corporation |
| 15080543 | | [REDACTED] | EMC Corporation |
| 15080554 | | [REDACTED] | EMC Corporation |
| 15081137 | | [REDACTED] | EMC Corporation |
| 15081470 | | [REDACTED] | EMC Corporation |
| 15081531 | | [REDACTED] | EMC Corporation |
| 15082670 | | [REDACTED] | EMC Corporation |
| 15082679 | | [REDACTED] | EMC Corporation |
| 15083324 | | [REDACTED] | EMC Corporation |
| 15083600 | | [REDACTED] | EMC Corporation |
| | | | |
| 15083662 | | [REDACTED] | EMC Corporation |
| 15083685 | | [REDACTED] | EMC Corporation |
| 15083687 | | [REDACTED] | EMC Corporation |
| 15083873 | | [REDACTED] | EMC Corporation |
| 15083911 | | [REDACTED] | EMC Corporation |
| 15083956 | | [REDACTED] | EMC Corporation |
| 15083958 | | [REDACTED] | EMC Corporation |
| 15084208 | | [REDACTED] | EMC Corporation |
| 15084234 | | [REDACTED] | EMC Corporation |
| 15084242 | | [REDACTED] | EMC Corporation |
| 15084285 | | [REDACTED] | EMC Corporation |
| 15084324 | | [REDACTED] | EMC Corporation |
| 15084346 | | [REDACTED] | EMC Corporation |
| 15084398 | | [REDACTED] | EMC Corporation |
| 15084529 | | [REDACTED] | EMC Corporation |
| 15084559 | | [REDACTED] | EMC Corporation |
| 15084604 | | [REDACTED] | EMC Corporation |
| 15084672 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 15084739 | | [REDACTED] | EMC Corporation |
| 15084790 | | [REDACTED] | EMC Corporation |
| 15084810 | | [REDACTED] | EMC Corporation |
| 15084819 | | [REDACTED] | EMC Corporation |
| 15084996 | | [REDACTED] | EMC Corporation |
| 15085123 | | [REDACTED] | EMC Corporation |
| 15085142 | | [REDACTED] | EMC Corporation |
| 15085148 | | [REDACTED] | EMC Corporation |
| 15085168 | | [REDACTED] | EMC Corporation |
| 15085172 | | [REDACTED] | EMC Corporation |
| 15085173 | | [REDACTED] | EMC Corporation |
| 15085181 | | [REDACTED] | EMC Corporation |
| 15085188 | | [REDACTED] | EMC Corporation |
| 15085234 | | [REDACTED] | EMC Corporation |
| 15085276 | | [REDACTED] | EMC Corporation |
| 15085282 | | [REDACTED] | EMC Corporation |
| 15085292 | | [REDACTED] | EMC Corporation |
| 15085876 | | [REDACTED] | EMC Corporation |
| 15085908 | | [REDACTED] | EMC Corporation |
| 15085937 | | [REDACTED] | EMC Corporation |
| 15085964 | | [REDACTED] | EMC Corporation |
| 15086276 | | [REDACTED] | EMC Corporation |
| 15086390 | | [REDACTED] | EMC Corporation |
| 15086429 | | [REDACTED] | EMC Corporation |
| 15086439 | | [REDACTED] | EMC Corporation |
| 15086503 | | [REDACTED] | EMC Corporation |
| 15086508 | | [REDACTED] | EMC Corporation |
| 15086514 | | [REDACTED] | EMC Corporation |
| 15086519 | | [REDACTED] | EMC Corporation |
| 15086547 | | [REDACTED] | EMC Corporation |
| 15086565 | | [REDACTED] | EMC Corporation |
| 15086581 | | [REDACTED] | EMC Corporation |
| 15086593 | | [REDACTED] | EMC Corporation |
| 15086629 | | [REDACTED] | EMC Corporation |
| 15086632 | | [REDACTED] | EMC Corporation |
| 15086644 | | [REDACTED] | EMC Corporation |
| 15086647 | | [REDACTED] | EMC Corporation |
| 15086747 | | [REDACTED] | EMC Corporation |
| 15086758 | | [REDACTED] | EMC Corporation |
| 15086780 | | [REDACTED] | EMC Corporation |
| 15086807 | | [REDACTED] | EMC Corporation |
| 15086839 | | [REDACTED] | EMC Corporation |
| 15086859 | | [REDACTED] | EMC Corporation |
| 15086877 | | [REDACTED] | EMC Corporation |
| 15086946 | | [REDACTED] | EMC Corporation |
| 15086966 | | [REDACTED] | EMC Corporation |
| 15086979 | | [REDACTED] | EMC Corporation |
| 15086989 | | [REDACTED] | EMC Corporation |
| 15087000 | | [REDACTED] | EMC Corporation |
| 15087067 | | [REDACTED] | EMC Corporation |
| 15087188 | | [REDACTED] | EMC Corporation |
| 15087792 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
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| 15087806 | | [REDACTED] | EMC Corporation |
| 15087817 | | [REDACTED] | EMC Corporation |
| 15088029 | | [REDACTED] | EMC Corporation |
| 15092250 | | [REDACTED] | EMC Corporation |
| 15095920 | | [REDACTED] | EMC Corporation |
| 15095953 | | [REDACTED] | EMC Corporation |
| 15096622 | | [REDACTED] | EMC Corporation |
| 15096646 | | [REDACTED] | EMC Corporation |
| 15096683 | | [REDACTED] | EMC Corporation |
| 15096883 | | [REDACTED] | EMC Corporation |
| 15096978 | | [REDACTED] | EMC Corporation |
| 15097589 | | [REDACTED] | EMC Corporation |
| 15097598 | | [REDACTED] | EMC Corporation |
| 15097978 | | [REDACTED] | EMC Corporation |
| 15098845 | | [REDACTED] | EMC Corporation |
| 15135817 | | [REDACTED] | EMC Corporation |
| 15136190 | | [REDACTED] | EMC Corporation |
| 15136327 | | [REDACTED] | EMC Corporation |
| 15136425 | | [REDACTED] | EMC Corporation |
| 15136574 | | [REDACTED] | EMC Corporation |
| 15138807 | | [REDACTED] | EMC Corporation |
| 15139881 | | [REDACTED] | EMC Corporation |
| 15143941 | | [REDACTED] | EMC Corporation |
| 15150263 | | [REDACTED] | EMC Corporation |
| 15155475 | | [REDACTED] | EMC Corporation |
| 15165437 | | [REDACTED] | EMC Corporation |
| 15166741 | | [REDACTED] | EMC Corporation |
| 15167222 | | [REDACTED] | EMC Corporation |
| 15168642 | | [REDACTED] | EMC Corporation |
| 15174175 | | [REDACTED] | EMC Corporation |
| 15175630 | | [REDACTED] | EMC Corporation |
| 15176656 | | [REDACTED] | EMC Corporation |
| 15180406 | | [REDACTED] | EMC Corporation |
| 15180438 | | [REDACTED] | EMC Corporation |
| 15181347 | | [REDACTED] | EMC Corporation |
| 15188006 | | [REDACTED] | EMC Corporation |
| 15190056 | | [REDACTED] | EMC Corporation |
| 15190448 | | [REDACTED] | EMC Corporation |
| 15190518 | | [REDACTED] | EMC Corporation |
| 15191039 | | [REDACTED] | EMC Corporation |
| 15191324 | | [REDACTED] | EMC Corporation |
| 15191361 | | [REDACTED] | EMC Corporation |
| 15191766 | | [REDACTED] | EMC Corporation |
| 15192212 | | [REDACTED] | EMC Corporation |
| 15192352 | | [REDACTED] | EMC Corporation |
| 15193611 | | [REDACTED] | EMC Corporation |
| 15194019 | | [REDACTED] | EMC Corporation |
| 15194173 | | [REDACTED] | EMC Corporation |
| 15194189 | | [REDACTED] | EMC Corporation |
| 15194327 | | [REDACTED] | EMC Corporation |
| 15194890 | | [REDACTED] | EMC Corporation |
| 15195854 | | [REDACTED] | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 15195864 | | [REDACTED] | EMC Corporation |
| 15195919 | | [REDACTED] | EMC Corporation |
| 15196110 | | [REDACTED] | EMC Corporation |
| 15196152 | | [REDACTED] | EMC Corporation |
| 15196163 | | [REDACTED] | EMC Corporation |
| 15196261 | | [REDACTED] | EMC Corporation |
| 15196283 | | [REDACTED] | EMC Corporation |
| 15197580 | | [REDACTED] | EMC Corporation |
| 15197863 | | [REDACTED] | EMC Corporation |
| 15198046 | | [REDACTED] | EMC Corporation |
| 15198284 | | [REDACTED] | EMC Corporation |
| 15198404 | | [REDACTED] | EMC Corporation |
| 15199689 | | [REDACTED] | EMC Corporation |
| 29/133035 | D501011 | DISK CARTRIDGE | EMC Corporation |
| 29/141540 | D462987 | BOOK COVER WITH HANDLES | EMC Corporation |
| 29167918 | D486494 | FRONT PANEL FOR ELECTRONIC CABINET (DESIGN) | EMC Corporation |
| 29193835 | D496050 | FRONT PANEL FOR ELECTRONIC CABINET (DESIGN) | EMC Corporation |
| 29195342 | D516929 | AUTHENTICATION DEVICE | EMC Corporation |
| 29195343 | D511983 | SECURITY DEVICE | EMC Corporation |
| 29213687 | D513007 | FRONT PANEL FOR AN ELECTRONIC CABINET | EMC Corporation |
| 29214508 | D517440 | SECURITY DEVICE | EMC Corporation |
| 29243882 | D534448 | AUTHENTICATION DEVICE | EMC Corporation |
| 29259339 | D570851 | FRONT PANEL FOR AN ELECTRONIC CABINET | EMC Corporation |
| 29478002 | D748661 | DISPLAY SCREEN WITH GRAPHICAL USER INTERFACE | EMC Corporation |
| 29486559 | | [REDACTED] | EMC Corporation |
| 29486566 | | [REDACTED] | EMC Corporation |
| 29486571 | | [REDACTED] | EMC Corporation |
| 29492424 | D743399 | FLASH MODULE | EMC Corporation |
| 62088427 | | [REDACTED] | EMC Corporation |
| 62093899 | | [REDACTED] | EMC Corporation |
| 62107156 | | [REDACTED] | EMC Corporation |
| 62148984 | | [REDACTED] | EMC Corporation |
| 62151747 | | [REDACTED] | EMC Corporation |
| 62163782 | | [REDACTED] | EMC Corporation |
| 62215624 | | [REDACTED] | EMC Corporation |
| 62222436 | | [REDACTED] | EMC Corporation |
| 90005180 | RE5692129 | MANAGING APPLICATION PROGRAMS IN A COMPUTER NETWORK BY USING A DATABASE OF APPLICATION OBJECTS | EMC Corporation |
| 9374221 | | DISTRIBUTED PROTECTION OF CREDENTIAL STORES UTILIZING MULTIPLE KEYS DERIVED FROM A MASTER KEY | EMC Corporation |
| 9389965 | | SYSTEM AND METHOD FOR IMPROVING PERFORMANCE OF BACKUP STORAGE SYSTEM WITH FUTURE ACCESS PREDICTION | EMC Corporation |
| 9395935 | | INTER-STORAGE PROCESSOR STORAGE POOL JOB STATUS COMMUNICATION | EMC Corporation |
| 9396061 | | AUTOMATED REPAIR OF STORAGE SYSTEM COMPONENTS VIA DATA ANALYTICS | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 9396071 | | SYSTEM AND METHOD FOR PRESENTING VIRTUAL MACHINE (VM) BACKUP INFORMATION FROM MULTIPLE BACKUP SERVERS | EMC Corporation |
| 9396207 | | FINE GRAINED TIERED STORAGE WITH THIN PROVISIONING | EMC Corporation |
| 9396243 | | HASH-BASED REPLICATION USING SHORT HASH HANDLE AND IDENTITY BIT | EMC Corporation |
| 9396341 | | DATA ENCRYPTION IN A DE-DUPLICATING STORAGE IN A MULTI-TENANT ENVIRONMENT | EMC Corporation |
| 9396349 | | METHOD AND APPARATUS FOR SHARING DATA FROM A SECURED ENVIRONMENT | EMC Corporation |
| 9397992 | | AUTHENTICATION USING COLOR-SHAPE PAIRINGS | EMC Corporation |
| 9398005 | | MANAGING SEED PROVISIONING | EMC Corporation |
| 9398016 | | CACHE-FREE AND LOCK-FREE HANDLING OF SECURITY INFORMATION FOR MULTIPLE DISTRIBUTED OBJECTS IN PROTECTION STORAGE SYSTEMS | EMC Corporation |
| 9398092 | | FEDERATED RESTORE OF CLUSTER SHARED VOLUMES | EMC Corporation |
| 9398720 | | CHASSIS WITH AIRFLOW AND THERMAL MANAGEMENT | EMC Corporation |
| 9400610 | | METHOD FOR CLEANING A DELTA STORAGE SYSTEM | EMC Corporation |
| 9400611 | | DATA MIGRATION IN CLUSTER ENVIRONMENT USING HOST COPY AND CHANGED BLOCK TRACKING | EMC Corporation |
| 9400613 | | INTELLIGENT PAIRING FOR SNAPSHOT BASED BACKUPS | EMC Corporation |
| 9400741 | | RECLAIMING SPACE FROM FILE SYSTEM HOSTING MANY PRIMARY STORAGE OBJECTS AND THEIR SNAPSHOTS | EMC Corporation |
| 9400792 | | FILE SYSTEM INLINE FINE GRAINED TIERING | EMC Corporation |
| 9401838 | | NETWORK EVENT CAPTURE AND RETENTION SYSTEM | EMC Corporation |
| 9401905 | | TRANSFERRING SOFT TOKEN AUTHENTICATION CAPABILITIES TO A NEW DEVICE | EMC Corporation |
| 9405583 | | RESOURCE PROVISIONING BASED ON LOGICAL PROFILES AND PIECEWISE OBJECTIVE FUNCTIONS | EMC Corporation |
| 9407759 | | TELEPHONIC COMMUNICATION REDIRECTION AND COMPLIANCE PROCESSING | EMC Corporation |
| 9413825 | | MANAGING FILE OBJECTS IN A DATA STORAGE SYSTEM | EMC Corporation |
| 9413856 | | DETECTING TIME ZONES USING HISTORICAL DATE SAMPLING | EMC Corporation |
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| | | | |
| | | | |
| 09261906 | 6148414 | METHODS AND SYSTEMS FOR IMPLEMENTING SHARED DISK ARRAY MANAGEMENT FUNCTIONS | EMC Corporation |
| 09374640 | 6182161 | METHOD AND APPARATUS FOR BUILDING SOFTWARE NETS USING AN ARRAY STRUCTURE | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 09399581 | 6385674 | SYSTEMS AND METHODS FOR DYNAMIC ALIGNMENT OF ASSOCIATED PORTIONS OF A CODE WORD FROM A PLURALITY OF ASYNCHRONOUS SOURCES | EMC Corporation |
| 09428157 | 6321294 | METHOD AND APPARATUS FOR CONVERTING BETWEEN LOGICAL AND PHYSICAL MEMORY SPACE IN A RAID SYSTEM | EMC Corporation |
| 09578530 | 6389559 | CONTROLLER FAIL-OVER WITHOUT DEVICE BRING-UP | EMC Corporation |
| 09578830 | 6351831 | STORAGE NETWORK CABLING VERIFICATION SYSTEM | EMC Corporation |
| 09657258 | 6912668 | METHODS AND SYSTEMS FOR IMPLEMENTING SHARED DISK ARRAY MANAGEMENT FUNCTIONS | EMC Corporation |
| | | | |
| 09718647 | 6732290 | RECOVERY SYSTEM FOR RAID WRITE | EMC Corporation |
| 09777139 | 7062648 | SYSTEM AND METHOD FOR REDUNDANT ARRAY NETWORK STORAGE | EMC Corporation |
| 09777149 | 6810398 | SYSTEM AND METHOD FOR UNORCHESTRATED DETERMINATION OF DATA SEQUENCES USING STICKY BYTE FACTORING TO DETERMINE BREAKPOINTS IN DIGITAL SEQUENCES | EMC Corporation |
| 09777150 | 6704730 | HASH FILE SYSTEM AND METHOD FOR USE IN A COMMONALITY FACTORING SYSTEM | EMC Corporation |
| 09781920 | 7194504 | SYSTEM AND METHOD FOR REPRESENTING AND MAINTAINING REDUNDANT DATA SETS UTILIZING DNA TRANSMISSION AND TRANSCRIPTION TECHNIQUES | EMC Corporation |
| 09782613 | 6826711 | SYSTEM AND METHOD FOR DATA PROTECTION WITH MULTIDIMENSIONAL PARITY | EMC Corporation |
| 09815824 | 7299290 | METHOD AND SYSTEM FOR PROVIDING MULTIMEDIA INFORMATION ON DEMAND OVER WIDE AREA NETWORKS | EMC Corporation |
| 10006929 | 7266706 | METHODS AND SYSTEMS FOR IMPLEMENTING SHARED DISK ARRAY MANAGEMENT FUNCTIONS | EMC Corporation |
| 10046070 | 6857059 | STORAGE VIRTUALIZATION SYSTEM AND METHODS | EMC Corporatio |
| 10198728 | 7404206 | NETWORK SECURITY DEVICES AND METHODS | EMC Corporation |
| 10302716 | 7194656 | SYSTEMS AND METHODS FOR IMPLEMENTING CONTENT SENSITIVE ROUTING OVER A WIDE AREA NETWORK (WAN) | EMC Corporation |
| 11031628 | 7577817 | STORAGE VIRTUALIZATION SYSTEM AND METHODS | EMC Corporation |
| 11082178 | 7246260 | METHODS AND SYSTEMS FOR IMPLEMENTING SHARED DISK ARRAY MANAGEMENT FUNCTIONS | EMC Corporation |
| 11177924 | 7975018 | SYSTEMS AND METHODS FOR PROVIDING DISTRIBUTED CACHE COHERENCE | EMC Corporation |
| 11261943 | 7783716 | SYSTEMS AND METHODS FOR IMPLEMENTING CONTENT SENSITIVE ROUTING OVER A WIDE AREA NETWORK (WAN) | EMC Corporation |
| 11486754 | 7475207 | MAINTAINING WRITE ORDER FIDELITY ON A MULTI-WRITER SYSTEM | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 12899315 | 9031993 | CUSTOMIZABLE LIBRARY FOR INFORMATION TECHNOLOGY DESIGN AND MANAGEMENT USING EXPERT KNOWLEDGE BASE | EMC Corporation |
| 12899435 | 8880682 | INTEGRATED FORENSICS PLATFORM FOR ANALYZING IT RESOURCES CONSUMED TO DERIVE OPERATIONAL AND ARCHITECTURAL RECOMMENDATIONS | EMC Corporation |
| 13727677 | 9063861 | HOST BASED HINTS | EMC Corporation |
| 13926218 | 9146878 | STORAGE RECOVERY FROM TOTAL CACHE LOSS USING JOURNAL-BASED REPLICATION | EMC Corporation |
| 14496262 | 9026729 | DATA RECOVERY AFTER TRIPLE DISK FAILURE | EMC Corporation |
| 13720003 | 8994514 | EVENT INDICATOR CREATION USING FIRST AND SECOND SETS OF VALUES | EMC Corporation |
| 14042142 | 9131624 | RACK-MOUNTABLE IT DEVICE | EMC Corporation |
| 13/536384 | 8949255 | METHODS AND APPARATUS FOR CAPTURE AND STORAGE OF SEMANTIC INFORMATION WITH SUB-FILES IN A PARALLEL COMPUTING SYSTEM | EMC Corporation |
| 13536289 | 9298733 | STORING FILES IN A PARALLEL COMPUTING SYSTEM BASED ON USER OR APPLICATION SPECIFICATION | EMC Corporation |
| 13536315 | 8825652 | SMALL FILE AGGREGATION IN A PARALLEL COMPUTING SYSTEM | EMC Corporation |
| 13536331 | 9087075 | STORING FILES IN A PARALLEL COMPUTING SYSTEM USING LIST-BASED INDEX TO IDENTIFY REPLICA FILES | EMC Corporation |
| 13536358 | 9165014 | METHODS AND APPARATUS FOR MULTI-RESOLUTION REPLICATION OF FILES IN A PARALLEL COMPUTING SYSTEM USING SEMANTIC INFORMATION | EMC Corporation |
| 13536369 | 8868576 | STORING FILES IN A PARALLEL COMPUTING SYSTEM BASED ON USER-SPECIFIED PARSER FUNCTION | EMC Corporation |
| 13676000 | 9286261 | ARCHITECTURE AND METHOD FOR A BURST BUFFER USING FLASH TECHNOLOGY | EMC Corporation |
| 13676019 | 9158540 | METHOD AND APPARATUS FOR OFFLOADING COMPUTE RESOURCES TO A FLASH CO-PROCESSING APPLIANCE | EMC Corporation |
| 14143771 | 9245048 | PARALLEL SORT WITH A RANGED, PARTITIONED KEY-VALUE STORE IN A HIGH PERFORMANCE COMPUTING ENVIRONMENT | EMC Corporation |
| 11193729 | 7920050 | PROXY DEVICE FOR ENHANCED PRIVACY IN AN RFID SYSTEM | EMC Corporation |
| 13/730058 | 9317521 | CLOUD OBJECT STORE FOR CHECKPOINTS OF HIGH PERFORMANCE COMPUTING APPLICATIONS USING DECOUPLING MIDDLEWARE | EMC Corporation |
| 13174177 | 9009385 | CO-RESIDENCY DETECTION IN A CLOUD-BASED SYSTEM | EMC Corporation |
| 13336692 | 8689282 | SECURITY POLICY ENFORCEMENT FRAMEWORK FOR CLOUD-BASED INFORMATION PROCESSING SYSTEMS | EMC Corporation |
| 13/730097 | 9069778 | CLOUD OBJECT STORE FOR ARCHIVE STORAGE OF HIGH PERFORMANCE COMPUTING DATA USING DECOUPLING MIDDLEWARE | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 13073461 | 8732702 | FILE SYSTEM FOR STORAGE AREA NETWORK | EMC Corporation |
| 13731663 | 9128739 | DETERMINING INSTANCES TO MAINTAIN ON AT LEAST ONE CLOUD RESPONSIVE TO AN EVALUATION OF PERFORMANCE CHARACTERISTICS | EMC Corporation |
| 13/731663 | 9128739 | DETERMINING INSTANCES TO MAINTAIN ON AT LEAST ONE CLOUD RESPONSIVE TO AN EVALUATION OF PERFORMANCE CHARACTERISTICS | EMC Corporation |
| 000189063 | 000189063 | SECURITY DEVICE | EMC Corporation |
| 000189071 | 000189071 | AUTHENTICATION DEVICE | EMC Corporation |
| 000316609 | 0100316609 | SECURITY DEVICE | EMC Corporation |
| 0306153.8 | 2383450 | SYSTEM AND METHOD FOR HEIRARCHICAL DATA STORAGE | EMC Corporation |
| 1695CHE2015 | | FAILOVER IN A SAN ENVIRONMENT | EMC Corporation |
| 2000-321951 | 3712932 | METHOD FOR THE TRANSPARENT EXCHANGE OF LOGICAL VOLUMES IN A DISK ARRAY STORAGE SYSTEM | EMC Corporation |
| 2001929 | 2001929 | SYSTEM & METHOD FOR SHARING RESOURCES OF A HOST COMPUTER AMONG A PLURALITY OF REMOTE COMPUTERS | EMC Corporation |
| 2002750 | 2002750 | ARRAYED DISK DRIVE SYSTEM AND METHOD | EMC Corporation |
| 200410098531.5 | | METHOD AND APPARATUS FOR DATA RETENTION IN A STORAGE SYSTEM | EMC Corporation |
| 2030438 | 2030438 | METHOD AND SYSTEM FOR REDUCING MEMORY REQUIREMENTS | EMC Corporation |
| 2056235 | 2056235 | ON-LINE RESTORATION OF REDUNDANCY INFORMATION IN A REDUNDANT ARRAY SYSTEM | EMC Corporation |
| 2058734 | 2058734 | Storage Device Array Architecture with Copyback Cache | EMC Corporation |
| 2091993 | 2091993 | FAULT TOLERANT COMPUTER SYSTEM | EMC Corporation |
| 2148105 | 2148105 | METHOD AND APPARATUS FOR AUTHENTICATION OF CLIENT SERVER COMMUNICATION | EMC Corporation |
| 2172075 | 2172075 | COMPUTER METHOD AND APPARATUS FOR ASYNCHRONOUS ORDERED OPERATIONS | EMC Corporation |
| 2182791 | 2182791 | METHOD AND APPARATUS TO SECURE DISTRIBUTED DIGITAL DIRECTORY OBJECT CHANGES | EMC Corporation |
| 2223933 | 2223933 | Method for managing globally distributed software components | EMC Corporation |
| 2226189 | 2226189 | METHOD AND APPARATUS FOR SYNCHRONIZING DATA TRANSMISSION WITH ON-DEMAND LINKS OF A NETWORK | EMC Corporation |
| 2226360 | 2226360 | System for replicating and associating file types with application programs among plurality of partitions in a server | EMC Corporation |
| 28304186 | 2109004 | APPARATUS AND METHOD FOR SYNCHRONIZING SEPARATE TIME OPERATOR | EMC Corporation |
| 3-338882 | 3071017 | On-Line Restoration of Redundancy Information in a Redundant Array System | EMC Corporation |
| 395488 | 1167971 | EXTERNAL MICROCIDE OPERATION IN A MULTI-LEVEL MICROPROCESSOR | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 401467 | | ARITHMETIC UNIT FOR USE IN DATA PROCESSING SYSTEMS | EMC Corporation |
| 401513 | 1180002 | Magnetic Disk Drive Having a Movable Drive Motor | EMC Corporation |
| 403453 | 1174768 | DIGITAL DATA PROCESSING SYSTEM-FHP | EMC Corporation |
| 403454 | 1174766 | DIGITAL DATA PROCESSING SYSTEM- FHP | EMC Corporation |
| 403455 | 1174767 | DIGITAL COMPUTER SYSTEM HAVING UNIQUE MEANS OF REFERRING TO OPERANDS AND ABILITY TO EXECUTE A PLURALITY OF INTERNAL LANGUAGES | EMC Corporation |
| 403456 | 1179063 | DATA PROCESSING SYSTEM HAVING A MEMORY USING OBJECT-BASED INFORMATION AND A PROTECTION SCHEME FOR DETERMINING ACCESS RIGHTS TO SUCH INFORMATION | EMC Corporation |
| 403457 | 1173172 | DATA PROCESSING SYSTEM USING OBJECT-BASED INFORMATION AND A PROTECTION SCHEME FOR DETERMINING ACCESS RIGHTS TO SUCH INFORMATION AND USING MULTILEVEL MICROCODE TECHNIQUES | EMC Corporation |
| 404845 | 1180449 | FIXED POINT AND FLOATING POINT COMPUTATION UNITS USING COMMONLY SHARED CONTROL FIELDS | EMC Corporation |
| 406715 | 1173177 | APPARATUS AND METHOD FOR SIMULTANEOUSLY DISPLAY OF CHARACTERS OF VARIABLE SIZE | EMC Corporation |
| 406721 | 1189645 | APPARATUS AND METHOD FOR SIMULTANEOUS DISPLAY OF CHARACTERS OF VARIABLE SIZE AND DENSITY | EMC Corporation |
| 410514 | 1188284 | Flexible Magnetic Disk Drive Using a Rigid Cartridge | EMC Corporation |
| 42734/97 | 696346 | Method and system for integrating additional functionality into a login system | EMC Corporation |
| 439800 | 1204218 | DIGITAL DATA PROCESSING SYSTEM HAVING DUAL-PURPOSE SCRATCHPAD AND ADDRESS TRANSLATION MEMORY | EMC Corporation |
| 4452989 | 630635 | ARRAYED DISK DRIVE SYSTEM AND METHOD | EMC Corporation |
| 4-504448 | 3129732 | Storage Device Array Architecture with Copyback Cache | EMC Corporation |
| 453646 | 1178714 | DIGITAL DATA PROCESSING SYSTEM-FHP | EMC Corporation |
| 459145 | 1207915 | DATA PROCESSING SYSTEM HAVING DUAL PROCESSORS | EMC Corporation |
| 467561 | 1200317 | FIXED POINT AND FLOATING POINT COMPUTATION UNITS USING COMMONLY SHARED CONTROL FIELDS | EMC Corporation |
| 488882 | 1246257 | SYSTEM FOR GENERATING DISPLAY DATA | EMC Corporation |
| 505280/1997 | 3279319 | METHOD AND APPARATUS FOR SYNCHRONIZING DATA TRANSMISSION WITH ON-DEMAND LINKS OF A NETWORK | EMC Corporation |
| 5114761989 | 3021503 | SYSTEM & METHOD FOR SHARING RESOURCES OF A HOST COMPUTER AMONG A PLURALITY OF REMOTE COMPUTERS | EMC Corporation |
| 514515/91 | 3156083 | FAULT TOLERANT COMPUTER SYSTEM | EMC Corporation |
| 519325/1996 | 2868315 | METHOD AND APPARATUS TO SECURE DISTRIBUTED DIGITAL DIRECTORY OBJECT CHANGES | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 523998 | 1270957 | METHOD AND APPARATUS FOR SYNCHRONIZING GENERATION OF SEPARATE, FREE RUNNING, TIME DEPENDENT EQUIPMENT | EMC Corporation |
| 54578/94 | 673393 | METHOD AND APPARATUS FOR AUTHENTICATION OF CLIENT SERVER COMMUNICATION | EMC Corporation |
| 62704 | 62704 | DATA PROCESSING SYSTEM | EMC Corporation |
| 63879 | 63879 | EXTERNAL MICROCIDE OPERATION IN A MULTI-LEVEL MICROPROCESSOR | EMC Corporation |
| 65123 | 65123 | DATA PROCESSING SYSTEM USING OBJECT-BASED INFORMATION AND A PROTECTION SCHEME FOR DETERMINING ACCESS RIGHTS TO SUCH INFORMATION AND USING MULTILEVEL MICROCODE TECHNIQUES | EMC Corporation |
| 6568686 | 587087 | METHOD AND APPARATUS FOR SYNCHRONIZING GENERATION OF SEPARATE, FREE RUNNING, TIME DEPENDENT EQUIPMENT | EMC Corporation |
| 69806914.5 | 69806914.5 | AN AGENT-IMPLEMENTED LOCKING MECHANISM | EMC Corporation |
| 700894/1993 | 137406 | FAULT TOLERANT COMPUTER SYSTEM | EMC Corporation |
| 704437/1996 | 256594 | METHOD AND APPARATUS TO SECURE DISTRIBUTED DIGITAL DIRECTORY OBJECT CHANGES | EMC Corporation |
| 75541 | 75541 | HIERACHIAL MEMORY RING PROTECTION SYSTEM USING COMPARISIONS OF REQUESTED AND PREV…. | EMC Corporation |
| 75542 | 75542 | DPS HAVING A UNIQUE MEMORY SYSTEM (EAGLE) | EMC Corporation |
| 75543 | 75543 | EAGLE DATA PROCESSING SYSTEM | EMC Corporation |
| 75544 | 75544 | DPS HAVING UNIQUE INSTRUCTION RESPONSIVE MEANS | EMC Corporation |
| 80 14929 | 2 486 291 | MANAGEMENT OF MASS MEMORY | EMC Corporation |
| 81300560.0 | 35334 | MICROECLIPSE DATA PROCESSING SYSTEM | EMC Corporation |
| 81305587.8 | P3176135.6 | EXTERNAL MICROCIDE OPERATION IN A MULTI-LEVEL MICROPROCESSOR | EMC Corporation |
| 81305587.8 | 057788 | EXTERNAL MICROCIDE OPERATION IN A MULTI-LEVEL MICROPROCESSOR | EMC Corporation |
| 81305587.8 | 0057788 | EXTERNAL MICROCIDE OPERATION IN A MULTI-LEVEL MICROPROCESSOR | EMC Corporation |
| 82302080.5 | 0064826 | ARITHMETIC UNIT FOR USE IN DATA PROCESSING SYSTEMS | EMC Corporation |
| 82302080.5 | 0064826 | ARITHMETIC UNIT FOR USE IN DATA PROCESSING SYSTEMS | EMC Corporation |
| 82302998.8 | 0067667 | FIXED POINT AND FLOATING POINT COMPUTATION UNITS USING COMMONLY SHARED CONTROL FIELDS | EMC Corporation |
| 82302998.8 | 0067667 | FIXED POINT AND FLOATING POINT COMPUTATION UNITS USING COMMONLY SHARED CONTROL FIELDS | EMC Corporation |
| 83200684.5 | 97977 | DATA PROCESSING SYSTEM "ALPHA" MICROECLIPSE | EMC Corporation |
| 84200987.0 | 0137525 | ARITHMETIC UNIT FOR USE IN DATA PROCESSING SYSTEMS | EMC Corporation |
| 84200987.0 | 0137525 | ARITHMETIC UNIT FOR USE IN DATA PROCESSING | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| | | SYSTEMS | |
| 84200991.2 | 0137526 | ARITHMETIC UNIT FOR USE IN A DATA PROCESSING SYSTEM FOR COMPUTING EXPONENT RESULTS AND DETECTING OVERFLOW AND UNDERFLOW CONDITIONS THEREOF | EMC Corporation |
| 84200991.2 | 0137526 | ARITHMETIC UNIT FOR USE IN A DATA PROCESSING SYSTEM FOR COMPUTING EXPONENT RESULTS AND DETECTING OVERFLOW AND UNDERFLOW CONDITIONS THEREOF | EMC Corporation |
| 84201482.1 | 0150522 | DATA PROCESSING SYSTEM | EMC Corporation |
| 84201482.1 | 150522 | HIERACHIAL MEMORY RING PROTECTION SYSTEM USING COMPARISIONS OF REQUESTED AND PREV…. | EMC Corporation |
| 84310/91 | 660939 | FAULT TOLERANT COMPUTER SYSTEM | EMC Corporation |
| 85 17645 | 2 590 700 | DISC INTERFACE LOGIC | EMC Corporation |
| 8-505969 | 2941947 | COMPUTER METHOD AND APPARATUS FOR ASYNCHRONOUS ORDERED OPERATIONS | EMC Corporation |
| 85200462.1 | 164138 | MICROECLIPSE DATA PROCESSING SYSTEM | EMC Corporation |
| 85304505.2 | 0173429 | DATA PROCESSING SYSTEM WITH UNIFIED I/O CONTROL AND ADAPTED FOR DISPLAY OF GRAPHICS | EMC Corporation |
| 85304505.2 | 0173429 | DATA PROCESSING SYSTEM WITH UNIFIED I/O CONTROL AND ADAPTED FOR DISPLAY OF GRAPHICS | EMC Corporation |
| 8619369.5 | 2182226 | DISTRIBUTED SWITCHING ARCHITECTURE | EMC Corporation |
| 86309239.1 | E71754 | METHOD AND APPARATUS FOR SYNCHRONIZING GENERATION OF SEPARATE, FREE RUNNING, TIME DEPENDENT EQUIPMENT | EMC Corporation |
| 86309239.1 | 0234100 | METHOD AND APPARATUS FOR SYNCHRONIZING GENERATION OF SEPARATE, FREE RUNNING, TIME DEPENDENT EQUIPMENT | EMC Corporation |
| 86309239.1 | 0234100 | METHOD AND APPARATUS FOR SYNCHRONIZING GENERATION OF SEPARATE, FREE RUNNING, TIME DEPENDENT EQUIPMENT | EMC Corporation |
| 86309239.1 | P3683481.5 | METHOD AND APPARATUS FOR SYNCHRONIZING GENERATION OF SEPARATE, FREE RUNNING, TIME DEPENDENT EQUIPMENT | EMC Corporation |
| 86309239.1 | 0234100 | METHOD AND APPARATUS FOR SYNCHRONIZING THE GENERATION OF SEPARATE, FREE-RUNNING, TIME-DEPENDENT CODES | EMC Corporation |
| 86309239.1 | 0234100 | METHOD AND APPARATUS FOR SYNCHRONIZING GENERATION OF SEPARATE, FREE RUNNING, TIME DEPENDENT EQUIPMENT | EMC Corporation |
| 86309239.1 | 0234100 | METHOD AND APPARATUS FOR SYNCHRONIZING GENERATION OF SEPARATE, FREE RUNNING, TIME DEPENDENT EQUIPMENT | EMC Corporation |
| 86309239.1 | 0234100 | METHOD AND APPARATUS FOR SYNCHRONIZING GENERATION OF SEPARATE, FREE RUNNING, TIME DEPENDENT EQUIPMENT | EMC Corporation |
| 86309239.1 | 0234100 | METHOD AND APPARATUS FOR SYNCHRONIZING GENERATION OF SEPARATE, FREE RUNNING, TIME DEPENDENT EQUIPMENT | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 86309239.1 | 0234100 | METHOD AND APPARATUS FOR SYNCHRONIZING GENERATION OF SEPARATE, FREE RUNNING, TIME DEPENDENT EQUIPMENT | EMC Corporation |
| 86309239.1 | 0234100 | METHOD AND APPARATUS FOR SYNCHRONIZING GENERATION OF SEPARATE, FREE RUNNING, TIME DEPENDENT EQUIPMENT | EMC Corporation |
| 87108428 | 108847 | Head-Gimble Protection for a Disk Drive | EMC Corporation |
| 89311715.0 | 68926436T2 | ARRAYED DISK DRIVE SYSTEM AND METHOD | EMC Corporation |
| 89311715.0 | 0369707 | ARRAYED DISK DRIVE SYSTEM AND METHOD | EMC Corporation |
| 89311715.0 | 0369707 | ARRAYED DISK DRIVE SYSTEM AND METHOD | EMC Corporation |
| 89311715.0 | 0369707 | ARRAYED DISK DRIVE SYSTEM AND METHOD | EMC Corporation |
| 89311715.0 | 0369707 | ARRAYED DISK DRIVE SYSTEM AND METHOD | EMC Corporation |
| 89912316.0 | 68928316.4 | SYSTEM & METHOD FOR SHARING RESOURCES OF A HOST COMPUTER AMONG A PLURALITY OF REMOTE COMPUTERS | EMC Corporation |
| 89912316.0 | 0441840 | SYSTEM & METHOD FOR SHARING RESOURCES OF A HOST COMPUTER AMONG A PLURALITY OF REMOTE COMPUTERS | EMC Corporation |
| 89912316.0 | 0441840 | SYSTEM & METHOD FOR SHARING RESOURCES OF A HOST COMPUTER AMONG A PLURALITY OF REMOTE COMPUTERS | EMC Corporation |
| 90005180 | RE5692129 | MANAGING APPLICATION PROGRAMS IN A COMPUTER NETWORK BY USING A DATABASE OF APPLICATION OBJECTS | EMC Corporation |
| 90313205.8 | 0438877 | METHOD AND SYSTEM FOR REDUCING MEMORY REQUIREMENTS | EMC Corporation |
| 90313205.8 | 0438877 | METHOD AND SYSTEM FOR REDUCING MEMORY REQUIREMENTS | EMC Corporation |
| 90313205.8 | 0438877 | METHOD AND SYSTEM FOR REDUCING MEMORY REQUIREMENTS | EMC Corporation |
| 90313205.8 | 0438877 | METHOD AND SYSTEM FOR REDUCING MEMORY REQUIREMENTS | EMC Corporation |
| 91310909.6 | 69129444 | On-Line Restoration of Redundancy Information in a Redundant Array System | EMC Corporation |
| 91310909.6 | 0492808 | On-Line Restoration of Redundancy Information in a Redundant Array System | EMC Corporation |
| 91310909.6 | 0492808 | On-Line Restoration of Redundancy Information in a Redundant Array System | EMC Corporation |
| 91310909.6 | 0492808 | On-Line Restoration of Redundancy Information in a Redundant Array System | EMC Corporation |
| 91310909.6 | 0492808 | On-Line Restoration of Redundancy Information in a Redundant Array System | EMC Corporation |
| 91312104.2 | 69126416.3 | Storage Device Array Architecture with Copyback Cache | EMC Corporation |
| 91312104.2 | 0493984 | Storage Device Array Architecture with Copyback Cache | EMC Corporation |
| 91312104.2 | 0493984 | Storage Device Array Architecture with Copyback Cache | EMC Corporation |
| 91312104.2 | 0493984 | Storage Device Array Architecture with Copyback Cache | EMC Corporation |
| 91312104.2 | 0493984 | Storage Device Array Architecture with Copyback Cache | EMC Corporation |
| 91908123.2 | 69128284.6 | FAILURE-TOLERANT MASS STORAGE SYSTEM | EMC Corporation |
| 91908123.2 | 0532514 | FAILURE-TOLERANT MASS STORAGE SYSTEM | EMC Corporation |
| 91908123.2 | 0532514 | FAILURE-TOLERANT MASS STORAGE SYSTEM | EMC Corporation |
| 91908123.2 | 0532514 | FAILURE-TOLERANT MASS STORAGE SYSTEM | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| 91908123.2 | 0532514 | FAILURE-TOLERANT MASS STORAGE SYSTEM | EMC Corporation |
| 91915106.8 | 0550457 | FAULT TOLERANT COMPUTER SYSTEM | EMC Corporation |
| 91915106.8 | 0550457 | FAULT TOLERANT COMPUTER SYSTEM | EMC Corporation |
| 91915106.8 | 0550457 | FAULT TOLERANT COMPUTER SYSTEM | EMC Corporation |
| 91915106.8 | 0550457 | FAULT TOLERANT COMPUTER SYSTEM | EMC Corporation |
| 91915106.8 | 0550457 | FAULT TOLERANT COMPUTER SYSTEM | EMC Corporation |
| 93.1062 | 302986 | FAULT TOLERANT COMPUTER SYSTEM | EMC Corporation |
| 93005211.24 | 2108621 | FAULT TOLERANT COMPUTER SYSTEM | EMC Corporation |
| 931276 | 101432 | FAULT TOLERANT COMPUTER SYSTEM | EMC Corporation |
| 9792058-1 | 42285 | METHOD AND APPARATUS FOR SECURE IDENTIFICATION AND VERIFICATION | EMC Corporation |
| 98912005.0 | 0972240 | AN AGENT-IMPLEMENTED LOCKING MECHANISM | EMC Corporation |
| 98912005.0 | 0972240 | AN AGENT-IMPLEMENTED LOCKING MECHANISM | EMC Corporation |
| AT(EP)90916922.9 | AT(EP)0497889 | METHOD AND APPARATUS FOR SECURE IDENTIFICATION AND VERIFICATION | EMC Corporation |
| AU1992495 | AU681500 | METHOD AND APPARATUS FOR UTILIZING A TOKEN FOR RESOURCE ACCESS | EMC Corporation |
| AU2004239738 | AU2004239738 | METHOD AND APPARATUS FOR AUTHENTICATION OF USERS AND WEB SITES | EMC Corporation |
| AU2004272083 | AU2004272083 | SYSTEM AND METHOD FOR RISK BASED AUTHENTICATION | EMC Corporation |
| AU2004300140 | AU2004300140 | SYSTEM AND METHOD FOR PROVIDING IMPROVED CLAIMANT AUTHENTICATION | EMC Corporation |
| AU2005283167 | AU2005283167 | METHOD AND APPARATUS OF AUTHENTICATION OF USERS AND COMMUNICATIONS RECEIVED FROM COMPUTER SYSTEMS | EMC Corporation |
| AU2011209673 | AU2011209673 | SYSTEM AND METHOD FOR NETWORK SECURITY INCLUDING DETECTION OF MAN-IN-THE-BROWSER ATTACKS | EMC Corporation |
| AU2011223767 | AU2011223767 | SYSTEM AND METHOD FOR NETWORK SECURITY INCLUDING DETECTION OF ATTACKS THROUGH PARTNER WEBSITES | EMC Corporation |
| AU5627898 | AU739898 | METHOD OF AND APPARATUS FOR PROVIDING SECURE DISTRIBUTED DIRECTORY SERVICES AND PUBLIC KEY INFRASTRUCTURE | EMC Corporation |
| AU6720890 | AU642362 | METHOD AND APPARATUS FOR SECURE IDENTIFICATION AND VERIFICATION | EMC Corporation |
| AU7981691 | AU649190 | METHOD AND APPARATUS FOR PERSONAL IDENTIFICATION | EMC Corporation |
| BE(EP)90916922.9 | BE(EP)0497889 | METHOD AND APPARATUS FOR SECURE IDENTIFICATION AND VERIFICATION | EMC Corporation |
| BE(EP)91910198.1 | BE(EP)549984 | METHOD AND APPARATUS FOR PERSONAL IDENTIFICATION | EMC Corporation |
| BR1020140104909 | | HETEROSCEDASTIC DATA COMPRESSION USING ARIMA-GARCH MODEL ESTIMATION | EMC Corporation |
| BR1120120186434 | | SYSTEM AND METHOD FOR NETWORK SECURITY INCLUDING DETECTION OF MAN-IN-THE-BROWSER ATTACKS | EMC Corporation |

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|---|---|---|---|
| BR112012022088 8 | | SYSTEM AND METHOD FOR NETWORK SECURITY INCLUDING DETECTION OF ATTACKS THROUGH PARTNER WEBSITES | EMC Corporation |
| CA2072150 | CA2072150 | METHOD AND APPARATUS FOR SECURE IDENTIFICATION AND VERIFICATION | EMC Corporation |
| CA2094026 | CA2094026 | METHOD AND APPARATUS FOR PERSONAL IDENTIFICATION$METHODE ET APPAREIL D'IDENTIFICATION DE PERSONNES | EMC Corporation |
| CA2183629 | CA2183629 | METHOD AND APPARATUS FOR UTILIZING A TOKEN FOR RESOURCE ACCESS | EMC Corporation |
| CA2223941 | CA2223941 | RESERVED CYLINDER FOR SCSI DEVICE WRITE-BACK CACHE | EMC Corporation |
| CA2316355 | CA2316355 | System And Method For Monitoring Quality Of Service Over Network | EMC Corporation |
| CA2318908 | CA2318908 | CONTENT ADDRESSABLE INFORMATION ENCAPSULATION, REPRESENTATION, AND TRANSFER | EMC Corporation |
| CA2363726 | CA2363726 | METHODS AND SYSTEMS FOR IMPLEMENTING SHARED DISK ARRAY MANAGEMENT FUNCTIONS | EMC Corporation |
| CA2454203 | CA2454203 | NETWORK SECURITY DEVICES AND METHODS | EMC Corporation |
| CA2549092 | CA2549092 | SYSTEM AND METHOD FOR PROVIDING IMPROVED CLAIMANT AUTHENTICATION | EMC Corporation |
| CA2642145 | CA2642145 | SYSTEMS AND METHODS FOR OBTAINING ULTRA-HIGH DATA AVAILABILITY AND GEOGRAPHIC DISASTER TOLERANCE | EMC Corporation |
| CA2698210 | CA2698210 | SYSTEM AND METHOD FOR REMOTE ASYNCHRONOUS DATA REPLICATION | EMC Corporation |
| CA2751180 | | SYSTEM AND METHOD FOR SECURE AND RELIABLE MULTI-CLOUD DATA REPLICATION | EMC Corporation |
| CA2759612 | | METHOD AND SYSTEM FOR SECURING DATA | EMC Corporation |
| CA2766731 | | METHOD AND SYSTEM FOR CLOUD BASED STORAGE | EMC Corporation |
| CA2787933 | | SYSTEM AND METHOD FOR NETWORK SECURITY INCLUDING DETECTION OF MAN-IN-THE-BROWSER ATTACKS | EMC Corporation |
| CA2791566 | | SYSTEM AND METHOD FOR NETWORK SECURITY INCLUDING DETECTION OF ATTACKS THROUGH PARTNER WEBSITES | EMC Corporation |
| CA2808516 | | SYSTEM AND METHOD FOR DATA DEDUPLICATION FOR DISK STORAGE SUBSYSTEMS | EMC Corporation |
| CH(EP)90916922 .9 | CH(EP)0497 889 | METHOD AND APPARATUS FOR SECURE IDENTIFICATION AND VERIFICATION | EMC Corporation |
| CH(EP)91910198 .1 | CH(EP)0555 219 | METHOD AND APPARATUS FOR PERSONAL IDENTIFICATION | EMC Corporation |
| CH83200684.5 | CH0097977 | DATA PROCESSING SYSTEM "ALPHA" MICROECLIPSE | EMC Corporation |
| CN 201610141381.4 | | METHOD AND APPARATUS FOR DATA STORAGE BASED ON APPLICATION OPTIMIZATION | EMC Corporation |
| CN00804532.1 | CN00804532. 1 | METHODS AND SYSTEMS FOR IMPLEMENTING SHARED DISK ARRAY MANAGEMENT FUNCTIONS | EMC Corporation |

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|---|---|---|---|
| CN01820889.4 | CN ZL01820889.4 | RESTORATION OF DATA BETWEEN PRIMARY AND BACKUP SYSTEMS | EMC Corporation |
| CN01821116.X | ZL01821116.X | METHOD AND APPARATUS FOR BACKING UP AND RESTORING COMPUTER DATA | EMC Corporation |
| CN01821130.5 | CN ZL01821130 | METHOD OF IMPROVING THE AVAILABILITY OF COMPUTER CLUSTERING SYSTEMS THROUGH THE USE OF A NETWORK MEDIUM LINK STATE | EMC Corporation |
| CN02804805.9 | CN ZL02804805.9 | METHOD FOR COMPUTING UNIQUE INDEX OF ELECTRONIC MAIL MESSAGE TO EFFECT DUPLICATION OF STORAGE | EMC Corporation |
| CN02806662.6 | ZL02806662.6 | NETWORK FILE SHARING METHOD AND SYSTEM | EMC Corporation |
| CN02809378.X | CN ZL 02809378.X | SELECTION OF A RESOURCE IN A DISTRIBUTED COMPUTER SYSTEM | EMC Corporation |
| CN02812792.7 | CN ZL02812792.7 | MIRRORING NETWORK DATA TO ESTABLISH VIRTUAL STORAGE AREA NETWORK | EMC Corporation |
| CN02816665.5 | ZL02816665.5 | SYSTEM AND METHODS FOR PROVIDING METADATA FOR TRACKING OF INFORMATION ON A DISTRIBUTED FILE SYSTEM OF STORAGE DEVICES | EMC Corporation |
| CN02818424.6 | ZL02818424.6 | EFFICIENT MANAGEMENT OF LARGE FILES | EMC Corporation |
| CN02818844.6 | ZL02818844.6 | SHARING OBJECTS BETWEEN COMPUTER SYSTEMS | EMC Corporation |
| CN02818848.9 | | EFFICIENT SEARCH FOR MIGRATION AND PURGE CANDIDATES | EMC Corporation |
| CN02823706.4 | CN02823706.4 | PRESERVING A SNAPSHOT OF SELECTED DATA OF A MASS STORAGE SYSTEM | EMC Corporation |
| CN03800377.5 | CN363382 | COPY-ON WRITE SNAPSHOT FOR VIRTUAL STORAGE DEVICE | EMC Corporation |
| CN03800378.3 | CN03800378.3 | VIRTUAL STORAGE DEVICES | EMC Corporation |
| CN03801721.0 | CN03801721.0 | DYNAMIC RDF GROUPS | EMC Corporation |
| CN200380100380.6 | ZL200380100380.6 | SYSTEMS AND METHODS FOR RESTRIPING FILES IN A DISTRIBUTED FILE SYSTEM | EMC Corporation |
| CN200410098532.X | CN200410098532.X | METHODS AND APPARATUS FOR GENERATING A CONTENT ADDRESS TO INDICATE DATA UNITS WRITTEN TO A STORAGE SYSTEM PROXIMATE IN TIME | EMC Corporation |
| CN200480008082.9 | CN200480008082.9 | VIRTUAL ORDERED WRITES | EMC Corporation |
| CN200480030360.0 | | EFFICIENT MANAGEMENT OF CRYPTOGRAPHIC KEY GENERATIONS | EMC Corporation |
| CN200480030394.X | | SYSTEM AND METHOD FOR RISK BASED AUTHENTICATION | EMC Corporation |
| CN200480033059.5 | ZL200480033059.5 | SYSTEM AND METHOD PROVIDING DISCONNECTED AUTHENTICATION | EMC Corporation |
| CN200480038039.7 | CN443505 | METHOD FOR TRANSFERRING DATA | EMC Corporation |

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|---|---|---|---|
| CN200510089040.9 | CN479193 | METHODS AND APPARATUS FOR ACCESSING CONTENT IN A VIRTUAL POOL ON A CONTENT ADDRESSABLE STORAGE SYSTEM | EMC Corporation |
| CN200510107957.7 | CN436890 | TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |
| CN200580031384.2 | ZL200580031384.2 | STORING DATA REPLICAS REMOTELY | EMC Corporation |
| CN200580033052.8 | ZL200580033052.8 | INDEX PROCESSING | EMC Corporation |
| CN200580033141.2 | ZL200580033141.2 | FILE INDEX PROCESSING | EMC Corporation |
| CN200580035170.2 | | CONFIGURING, MONITORING AND/OR MANAGING RESOURCE GROUPS INCLUDING A VIRTUAL MACHINE | EMC Corporation |
| CN200580044663.2 | ZL200580044663.2 | BACKUP INFORMATION MANAGEMENT | EMC Corporation |
| CN200580046178.9 | ZL200580046178.9 | CONTENT ADDRESSED STORAGE DEVICE AND METHOD FOR STORING DATA THEREIN | EMC Corporation |
| CN200580046233.4 | ZL200580046233.4 | IMPLEMENTING APPLICATION SPECIFIC MANAGEMENT POLICIES ON A CONTENT ADDRESSED STORAGE DEVICE | EMC Corporation |
| CN200580048139.2 | CN101208668B | SYSTEMS AND METHODS FOR DYNAMIC DATA BACKUP | EMC Corporation |
| CN200580048140.5 | CN101057346 2C | SYSTEMS AND METHODS FOR RESTORING DATA | EMC Corporation |
| CN200680002191.9 | CN200680002191.9 | METHODS AND APPARATUS FOR MANAGING DELETION OF DATA | EMC Corporation |
| CN200680002192.3 | ZL200680002192.3 | METHODS AND APPARATUS FOR MANAGING DELETION OF DATA | EMC Corporation |
| CN200680003967.9 | CN1153416 | CHECKPOINT AND CONSISTENCY MARKERS | EMC Corporation |
| CN200680005222.6 | ZL200680005222.6 | METHOD OF DISTRIBUTING DERIVATIVE SEEDS (AMENDED) | EMC Corporation |
| CN200680012117.5 | ZL200680012117.5 | TRAVERSING DATA IN A REPEATABLE MANNER | EMC Corporation |
| CN200680023506.8 | ZL200680023506.8 | REDIRECTING AND MIRRORING OF TELEPHONIC COMMUNICATIONS | EMC Corporation |
| CN200680029860.1 | ZL200680029860.1 | INFORMATION PROTECTION METHOD AND SYSTEM | EMC Corporation |
| CN200680030146.4 | ZL200680030146.4 | DATA OBJECT SEARCH AND RETRIEVAL | EMC Corporation |
| CN200680031467.6 | CN101253484B | CREATION OF A SINGLE CLIENT SNAPSHOT USING A CLIENT UTILITY | EMC Corporation |
| CN200680047701.4 | CN848333 | CONTINUOUS BACKUP | EMC Corporation |
| CN200710089364.1 | ZL200710089364.1 | SYSTEM AND METHOD OF INDEXING UNIQUE ELECTRONIC MAIL MESSAGES AND USES OF THE SAME | EMC Corporation |
| CN200780009902.X | ZL200780009902.X | HIGH EFFICIENCY PORTABLE ARCHIVE | EMC Corporation |
| CN200780011007.1 | CN1178990 | ACCESSING DATA STORAGE DEVICES | EMC Corporation |

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|---|---|---|---|
| CN200780016456.5 | CN1360387 | METHODS AND APPARATUS FOR TRANSFERRING CONTENT FROM A STORAGE SYSTEM | EMC Corporation |
| CN200780016805.3 | CN101449269B | AUTOMATED PRIORITY RESTORES | EMC Corporation |
| CN200780021765.1 | ZL200780021765.1 | EFFICIENT DATA STORAGE USING RESEMBLANCE OF DATA SEGMENTS | EMC Corporation |
| CN200810173557.X | CN101515273B | SYSTEM AND METHODS FOR PROVIDING METADATA FOR TRACKING OF INFORMATION ON A DISTRIBUTED FILE SYSTEM OF STORAGE DEVICES | EMC Corporation |
| CN200810189560.0 | ZL200810189560.0 | AUTHENTICATED SERVICE VIRTUALIZATION | EMC Corporation |
| CN200880012226.6 | ZL200880012226.6 | SEEDING REPLICATION | EMC Corporation |
| CN200880017055.6 | ZL200880017055.6 | AUTOMATED INFORMATION LIFE-CYCLE MANAGEMENT WITH THIN PROVISIONING | EMC Corporation |
| CN200880019270.X | ZL200880019270.X | CLUSTER STORAGE USING SUBSEGMENTING | EMC Corporation |
| CN200880100725.0 | ZL200880100725.0 | SYSTEM AND METHOD FOR REMOTE ASYNCHRONOUS DATA REPLICATION | EMC Corporation |
| CN200880103418.8 | ZL200880103418.8 | SYSTEM AND METHOD FOR PROVIDING WRITE-ONCE-READ-MANY (WORM) STORAGE | EMC Corporation |
| CN200880105823.3 | ZL200880105823.3 | DE-DUPLICATION IN VIRTUALIZED SERVER AND VIRTUALIZED STORAGE ENVIRONMENTS | EMC Corporation |
| CN200880113184.5 | ZL200880113184.5 | POLICY BASED FILE MANAGEMENT | EMC Corporation |
| CN200980133628.6 | ZL200980133628.6 | METHOD AND APPARATUS FOR MANAGING DATA OBJECTS OF A DATA STORAGE SYSTEM | EMC Corporation |
| CN200980145334.5 | ZL200980145334.5 | DELTA COMPRESSION AFTER IDENTITY DEDUPLICATION | EMC Corporation |
| CN201010255371.6 | | SYSTEM AND METHOD OF FILE LOCKING WITHIN A NETWORK FILE SYSTEM FEDERATED NAMESPACE | EMC Corporation |
| CN201010297739.5 | | MONITORING CIRCUIT | EMC Corporation |
| CN201010508441.4 | | PROVIDING SECURITY MECHANISMS FOR VIRTUAL MACHINE IMAGES | EMC Corporation |
| CN201010601491.7 | ZL201010601491.7 | APPARATUSES AND METHODS FOR INFORMATION TECHNOLOGY RESOURCE ALLOCATION AND USAGE TRACKING IN CLOUD SYSTEMS | EMC Corporation |
| CN201010601493.6 | ZL201010601493.6 | METHOD AND DEVICE FOR HARDENING A SOFTWARE EXECUTION IN RANDOM ACCESS STORAGE DEVICE | EMC Corporation |
| CN201010603127.4 | ZL201010603127.4 | STORAGE SPACE RECLAIMING METHOD ON WINDOWS PLATFORM FOR VIRTUAL PROVISIONING | EMC Corporation |
| CN201010603144.8 | ZL201010603144.8 | METHOD TO ROBUSTLY ELECT THE MASTER USING SHARED-DISK QUORUM DEVICES IN A CLUSTER WITH DYNAMIC NUMBER OF NODES AND UNCERTAIN CONNECTIVITY | EMC Corporation |
| CN201010612937.6 | ZL201010612937.6 | HOUSING SYSTEM FOR RECEPTACLES | EMC Corporation |

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|---|---|---|---|
| CN201080015183.4 | CN102439560A | DATA REDISTRIBUTION IN DATA REPLICATION SYSTEMS | EMC Corporation |
| CN201080028493.X | | SYSTEM AND METHOD FOR PROVIDING LONG-TERM STORAGE FOR DATA | EMC Corporation |
| CN201080036014.9 | | SEGMENT DEDUPLICATION SYSTEM WITH ENCRYPTION OF SEGMENTS | EMC Corporation |
| CN201080042904.0 | | SNAPSHOTTING OF A PERFORMANCESTORAGE SYSTEM IN A SYSTEM FOR PERFORMANCE IMPROVEMENT OF A CAPACITY OPTIMIZED STORAGE SYSTEM | EMC Corporation |
| CN201080063921.2 | | SYSTEMS AND METHODS FOR FACILITATING DATA DISCOVERY | EMC Corporation |
| CN201110069907.X | ZL201110069907.X | FILE SYSTEM FOR STORAGE AREA NETWORK | EMC Corporation |
| CN201110166629.X | | METHOD AND APPARATUS TO CONSTRUCT A SECURE COMPUTING ENVIRONMENT FROM TRUSTED BOOTABLE STORAGE | EMC Corporation |
| CN201110289091.1 | ZL201110289091.1 | IMPROVE CACHE COHERENCE THROUGH DELEGATION AND REFERRAL IN CLUSTER FILE SYSTEM | EMC Corporation |
| CN201110322410.4 | ZL201110322410.4 | IMPLEMENTING APPLICATION SPECIFIC MANAGEMENT POLICIES ON A CONTENT ADDRESSED STORAGE DEVICE | EMC Corporation |
| CN201110429998.3 | | METHOD AND APPARATUS FOR REALTIME DATA PROCESSING | EMC Corporation |
| CN201110430012.4 | | METHOD AND APPARATUS FOR INDICATING ALIVENESS OF NODES IN CLUSTER | EMC Corporation |
| CN201110456748.9 | | APPARATUS AND METHOD FOR MANAGING DATA BACKUP JOBS | EMC Corporation |
| CN201110456770.3 | ZL201110456770.3 | METHOD AND APPARATUS FOR OVER-TEMPERATURE PROTECTION OF DEVICES | EMC Corporation |
| CN201180013029.8 | | INDEX SEARCHING USING A BLOOM FILTER | EMC Corporation |
| CN201180041638.4 | | DATA ACCESS DURING DATA RECOVERY | EMC Corporation |
| CN201180046629.4 | | OPTIMIZED RECOVERY | EMC Corporation |
| CN201180046759.8 | | TRANSMITTING FILESYSTEM CHANGES OVER A NETWORK | EMC Corporation |
| CN201180063279.2 | | EFFICIENT STORAGE TIERING | EMC Corporation |
| CN201210102386.8 | | CONVENIENT EVALUATION AND COMPARISON PLATFORM FOR DATABASE PARTITIONING SCHEMES | EMC Corporation |
| CN201210103120.5 | ZL201210103120.5 | HYPERVISOR COORDINATED VIRTUAL CLUSTER SNAPSHOT | EMC Corporation |
| CN201210103128.1 | | METHOD AND APPARATUS FOR SAVING SNAPSHOT IN A FILESYSTEM | EMC Corporation |
| CN201210103131.3 | | METHOD, DEVICE AND COMPUTER PROGRAM FOR ACCELERATING SPEED OF BRING SNAPSHOT SERVICE BACK ONLINE | EMC Corporation |
| CN201210103132 | | METHOD AND APPARATUS FOR MAINTAINING | EMC Corporation |

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|---|---|---|---|
| .8 | | SOFTWARE SYSTEM | |
| CN201210169887.8 | ZL201210169887.8 | HIGH EFFICIENCY PORTABLE ARCHIVE | EMC Corporation |
| CN201210206505.4 | | CREATION OF A SINGLE CLIENT SNAPSHOT USING A CLIENT UTILITY | EMC Corporation |
| CN201210236447.X | | METHOD AND SYSTEM FOR RECLAIMING STORAGE SPACE | EMC Corporation |
| CN201210299545.8 | CN102999543 | EFFICIENT DATA STORAGE USING RESEMBLANCE OF DATA SEGMENTS | EMC Corporation |
| CN201210366772.8 | | INTERACTIVE VISUAL DATA MINING FOR INCREASING CLASSIFICATION ACCURACY | EMC Corporation |
| CN201210375612.X | | METHOD AND SYSTEM FOR MANAGING VIRTUAL MACHINE DISKS | EMC Corporation |
| CN201210387802.3 | | METHOD AND SYSTEM FOR DATABASE PARTITIONING | EMC Corporation |
| CN201210403383.8 | ZL201210403383.8 | TRAVERSING DATA IN A REPEATABLE MANNER | EMC Corporation |
| CN201210417663.4 | | METHODS AND APPARATUSES FOR DIAGNOSING AND REMEDIATION OF FAULTS IN SYSTEMS | EMC Corporation |
| CN201210422261.3 | ZL201210422261.3 | AUTOMATED PRIORITY RESTORES AND ASSOCIATED DEVICES/COMPUTER PROGRAM PRODUCTS | EMC Corporation |
| CN201210439999.0 | | ANALYSIS SYSTEM FOR INTELLIGENT CUSTOMER SERVICE BASED ON COMMON SEQUENCE PATTERN | EMC Corporation |
| CN201210440761.X | | METHOD AND APPARATUS OF PROVIDING CACHING SERVICE IN NETWORK ARCHITECTURES | EMC Corporation |
| CN201210519142.X | | METHOD AND APPARATUS FOR IDENTIFYING IMAGE CONTENT | EMC Corporation |
| CN201210571064.8 | | APPARATUS AND METHOD FOR SEARCHING INFORMATION | EMC Corporation |
| CN201210595674.1 | | SYSTEM AND METHOD FOR OPTIMIZING VIRTUAL DATA CENTER PROVISIONING WITH DOMAIN-KNOWLEDGE | EMC Corporation |
| CN201210595746.2 | | VPN AUTHENTICATION METHOD BASED ON QR CODE | EMC Corporation |
| CN201210595747.7 | | METHOD AND SYSTEM FOR DATA PROTECTION | EMC Corporation |
| CN201210596218.9 | | METHOD AND APPARATUS FOR MANAGING MEMORY SPACE | EMC Corporation |
| CN201210596219.3 | | METHOD, SYSTEM AND APPARATUS FOR SAFELY OPERATING COMPUTER | EMC Corporation |
| CN201280024354.9 | | SYSTEM AND METHOD FOR MAINTAINING CONSISTENT POINTS IN FILE SYSTEMS USING A PRIME DEPENDENCY LIST | EMC Corporation |
| CN201280025403.0 | | RESOURCE EFFICIENT SCALE-OUT FILE SYSTEMS | EMC Corporation |
| CN201280025415.3 | | TIME-BASED DATA PARTITIONING | EMC Corporation |
| CN201280062095.9 | | EFFICIENT BACKUP REPLICATION | EMC Corporation |

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|---|---|---|---|
| CN201310060863.3 | | METHOD, APPARATUS AND SYSTEM FOR COLLECTING DATA IN INTERNET OF THINGS | EMC Corporation |
| CN201310078391.4 | | METHOD AND APPARATUS FOR PARALLEL COMPUTING | EMC Corporation |
| CN201310086342.5 | | METHOD AND SYSTEM FOR DETERMINING CORRECTNESS OF AN APPLICATION | EMC Corporation |
| CN201310095686.2 | | METHOD AND APPARATUS FOR DATA COPY | EMC Corporation |
| CN201310095687.7 | | METHOD AND APPARATUS FOR DATA MANAGEMENT IN MULTI-TENANT DISTRIBUTIVE ENVIRONMENT | EMC Corporation |
| CN201310095688.1 | | METHOD AND APPARATUS FOR DATABASE SEARCH | EMC Corporation |
| CN201310262708.X | | METHOD AND APPARATUS FOR DOCUMENT RECOMMENDATION | EMC Corporation |
| CN201310272835.8 | | DATA TRANSFER METHOD AND APPARTUS | EMC Corporation |
| CN201310272881.8 | | APPARATUS AND METHOD FOR MEASURING PERFORMANCE OF A STORAGE SYSTEM | EMC Corporation |
| CN201310338314.8 | | METHOD AND SYSTEM FOR PROFILE MANAGEMENT AND ACCESS CONTROL IN HETEROGENEOUS CONVERGENT COMMUNICATION NETWORKS | EMC Corporation |
| CN201310441156.9 | | METHOD AND APPARATUS FOR TROUBLESHOOTING BASED ON LOG SIMILARITY | EMC Corporation |
| CN201310453061.9 | | HIDDEN FAULT DETECTION CIRCUIT AND METHOD FOR DETECTING HIDDEN FAULT WITH HIDDEN FAULT DETECTION CIRCUIT | EMC Corporation |
| CN201310466038.3 | | METHOD AND DEVICE FOR REMOVING CACHE DATA | EMC Corporation |
| CN201310466056.1 | | METHOD AND APPARATUS FOR FILE SYSTEM | EMC Corporation |
| CN201310724704.9 | | METHOD AND APPARATUS FOR CONFIGURING A DATA CENTER | EMC Corporation |
| CN201310724705.3 | | METHOD AND APPARATUS FOR FAULT HANDLING | EMC Corporation |
| CN201310724717.6 | | DATA COPY AVOIDANCE ACROSS A STORAGE | EMC Corporation |
| CN201310737050.3 | | METHOD AND APPARATUS FOR OPINION DATA MANAGEMENT | EMC Corporation |
| CN201310750589.2 | | METHOD AND APPARATUS FOR MANAGING NETWORK ATTACHED STORAGE | EMC Corporation |
| CN201310750628.9 | | METHOD AND APPARATUS FOR MANAGING MEMORY | EMC Corporation |
| CN201310750662.6 | | AN APPARATUS AND METHOD FOR A NETWORK STORAGE NODE, A NETWORK STORAGE NODE USING THE SAME, AND A NETWORK STORAGE SYSTEM | EMC Corporation |
| CN201310755993.9 | | INCLUDING KERNEL OBJECT INFORMATION IN A USER DUMP | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| CN201310755994.3 | | METHOD AND SYSTEM FOR PROVIDING VIRTUAL STORAGE POOLS TO TARGET APPLICATIONS | EMC Corporation |
| CN201310755995.8 | | STORAGE DEVICE AND METHOD THEREFOR | EMC Corporation |
| CN201310756036.8 | | METHOD AND APPARATUS FOR DATA MINING | EMC Corporation |
| CN201310756039.1 | | APPARATUS AND METHOD FOR FACILITATING ACCESS TO DATA IN DISTRIBUTED STORAGE SYSTEMS | EMC Corporation |
| CN201310756078.1 | | METHOD AND APPARATUS FOR MANAGING RESOURCE ALLOCATION IN HIERARCHICAL QUOTA SYSTEMS | EMC Corporation |
| CN201380010077.0 | | SYSTEMS AND METHODS INVOLVING VIRTUAL MACHINE HOST ISOLATION OVER A NETWORK | EMC Corporation |
| CN201380050816.9 | | SYSTEM AND METHOD FOR FULL VIRTUAL MACHINE BACKUP USING STORAGE SYSTEM FUNCTIONALITY | EMC Corporation |
| CN201380054172.0 | | FORMAT IDENTIFICATION FOR FRAGMENTED BYTE ALIGNED INTEGER IMAGE DATA | EMC Corporation |
| CN201380054188.1 | | LOSSLESS COMPRESSION OF FRAGMENTED IMAGE DATA | EMC Corporation |
| CN201410135582.4 | | METHOD AND APPARATUS FOR AUTOMATICALLY RELOCATING DATA BETWEEN STORAGE ARRAYS | EMC Corporation |
| CN201410135607.0 | | APPARATUS, METHOD AND SYSTEM FOR MANAGING POWER | EMC Corporation |
| CN201410135626.3 | | APPARATUS AND METHOD FOR FACILITATING MANAGING OF RESOURCES | EMC Corporation |
| CN201410135651.1 | | METHOD AND APPARATUS OF STORAGE EXPANSION IN VIRTUAL STORAGE SYSTEM | EMC Corporation |
| CN201410135722.8 | | METHOD AND APPARATUS FOR ACCESS DATA | EMC Corporation |
| CN201410135820.1 | | METHOD AND APPARATUS FOR MONITORING THE HEALTH CONDITION OF A HARD DISK | EMC Corporation |
| CN201410136587.9 | | METHOD AND APPARATUS FOR DYNAMIC STORAGE TIERING | EMC Corporation |
| CN201410407394.2 | | SYSTEM AND METHOD FOR RISK BASED AUTHENTICATION | EMC Corporation |
| CN201410520353.4 | | METHOD AND SYSTEM FOR GENERATING TWO-DIMENSIONAL CODE | EMC Corporation |
| CN201410527596.0 | | METHOD AND APPARATUS FOR DETERMINING A FAILURE POSITION IN A STORAGE SYSTEM | EMC Corporation |
| CN201410527635.7 | | METHOD AND APPARATUS FOR ACCELERATING DATA RECONSTRUCTION FOR A DISK ARRAY | EMC Corporation |
| CN201410527708.2 | | METHOD AND APPARATUS FOR IMPROVING PERFORMANCE OF A DECLUSTERED DISK ARRAY | EMC Corporation |
| CN201410562076.3 | | METHOD AND APPARATUS FOR ENABLING NON-VOLATILE RANDOM ACCESS OF DATA | EMC Corporation |
| CN201410562464.1 | | METHOD AND APPARATUS FOR PROCESSING INPUT/OUTPUT OPERATION REQUEST | EMC Corporation |
| CN201410562465 | | DATA CACHE DEVICE AND METHOD FOR DATA | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| .6 | | CACHING | |
| CN201410562531.X | | METHOD AND APPARATUS FOR DISK DATA MANAGEMENT | EMC Corporation |
| CN201410573345.6 | | METHOD AND APPARATUS FOR ASSIGNING LOCK RESOURCE FOR OBJECTS | EMC Corporation |
| CN201410813707.4 | | COMPUTING DEVICE AND METHOD FOR OBTAINING FAULT RELATED INFORMATION | EMC Corporation |
| CN201410813708.9 | | METHOD AND APPARATUS FOR MANAGING RESOURCES BASED ON QUOTA | EMC Corporation |
| CN201410813709.3 | | METHOD AND APPARATUS FOR MANAGEMENT OF STORAGE DEVICES | EMC Corporation |
| CN201410813967.1 | | METHOD AND SYSTEM FOR AUTOMATICALLY TESTING FIRMWARE | EMC Corporation |
| CN201410813970.3 | | SYSTEM AND METHOD FOR MANAGING HOTPLUG OF PERIPHERAL COMPONENT INTERCONNECT DEVICE | EMC Corporation |
| CN201410854536.X | | METHOD AND COMPUTING DEVICE FOR SOFTWARE TEST | EMC Corporation |
| CN201480006056.6 | | DATA ANALYTICS PLATFORM OVER PARALLEL DATABASES AND DISTRIBUTED FILE SYSTEMS | EMC Corporation |
| CN201480071862.1 | | PARALLEL ON-PREMISES AND CLOUD-BASED AUTHENTICATION | EMC Corporation |
| CN201510003757.0 | | METHOD AND APPARATUS FOR ANALYZING USER BEHAVIOR | EMC Corporation |
| CN201510003758.5 | | METHOD AND APPARATUS FOR MONITORING A TARGET OBJECT BY A PLURALITY OF CAMERAS | EMC Corporation |
| CN201510003759.X | | METHOD AND APPARATUS FOR TEXT COMPRESSION AND DECOMPRESSION | EMC Corporation |
| CN201510004540.1 | | METHOD AND SYSTEM FOR HARD DISK MOVEMENT RECOGNITION | EMC Corporation |
| CN201510004571.7 | | METHOD AND APPARATUS FOR IMPROVING SETTING OF QUALITY OF SERVICE | EMC Corporation |
| CN201510004776.5 | | METHOD AND APPARATUS FOR REUSING STORAGE BLOCKS OF A FILE SYSTEM | EMC Corporation |
| CN201510004778.4 | | METHOD AND APPARATUS FOR PROCESSING TRANSACTIONS IN A SYNCHRONIZED REPLICATION SYSTEM | EMC Corporation |
| CN201510004779.9 | | METHOD AND SYSTEM FOR PROVIDING ACCESS TO RESOURCES | EMC Corporation |
| CN201510004780.1 | | METHOD AND APPARATUS FOR CONTROLLING SHARING OF RESOURCES AMONG A PLURALITY OF NODES | EMC Corporation |
| CN201510004936.6 | | METHOD AND APPARATUS FOR CROSS-LAYER ORCHESTRATION OF RESOURCES AND MULTI-LAYER ARCHITECTURE DATACENTER | EMC Corporation |
| CN201510004937.0 | | METHOD AND APPARATUS FOR PROVIDING STORAGE SERVICE TO A TENANT IN A CLOUD STORAGE ENVIRONMENT | EMC Corporation |
| CN201510004939.X | | A METHOD FOR PROCESSING INTELLIGENT RICH-MEDIA AND SYSTEM THEREOF | EMC Corporation |
| CN201510004940 | | METHOD AND APPARATUS FOR FAILURE | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| .2 | | RECOVERY IN STORAGE DEVICE | |
| CN201510035650.4 | | METHOD AND SYSTEM FOR SERVICE-AWARE PARITY PLACEMENT IN A STORAGE SYSTEM | EMC Corporation |
| CN201510035668.4 | | METHOD AND SYSTEM FOR SERVICE-AWARE DATA PLACEMENT IN A STORAGE SYSTEM | EMC Corporation |
| CN201510178736 2 | | METHOD AND APPARATUS FOR FAILING BACK BLOCK OBJECTS IN BATCH | EMC Corporation |
| CN201510178760 6 | | METHOD AND SYSTEM FOR PROVIDING SECURE ACCESS TO DATA IN MOBILE DEVICES | EMC Corporation |
| CN201510181573 3 | | METHOD, COALESCING CONFIGURATION ENGINE, COALESCING CONFIGURATION TOOL, AND FILE SYSTEM FOR STORAGE SYSTEM | EMC Corporation |
| CN201510181882 0 | | METHOD AND SYSTEM FOR DETECTING AND HANDLING ERRORS IN BUS FABRIC | EMC Corporation |
| CN201510184287 2 | | METHOD AND APPARATUS FOR SCALING OUT STORAGE DEVICES AND SCALED-OUT STORAGE DEVICES | EMC Corporation |
| CN201510184340 9 | | METHOD AND APPARATUS OF CONSTRUCTING SCALABLE STORAGE DEVICES, AND SCALED STORAGE DEVICES | EMC Corporation |
| CN201510184385 6 | | METHOD AND APPARATUS FOR EXTENDING CACHE OF STORAGE SYSTEM | EMC Corporation |
| CN201510184593 6 | | METHOD AND APPARATUS FOR IMPLEMENTING MULTIPLE CONTENT MANAGEMENT SERVICES OPERATIONS | EMC Corporation |
| CN201510184900 0 | | DATA STORAGE MANAGEMENT SYSTEM AND METHOD | EMC Corporation |
| CN201510185150 9 | | METHODS AND APPARATUSES FOR CONTENT RESOURCE MANAGEMENT | EMC Corporation |
| CN201510185152 8 | | APPARATUS AND METHOD FOR TESTING STORAGE NETWORK | EMC Corporation |
| CN201510338000.7 | | MIGRATING PRIVATE INFRASTRUCTURE SERVICES TO A CLOUD | EMC Corporation |
| CN201510342013.1 | | SOFTWARE OVERLAYS FOR DISAGGREGATED COMPONENTS | EMC Corporation |
| CN201510353440.X | | METHOD AND DEVICE FOR MANAGING STORAGE ARRAY CONFIGURATION | EMC Corporation |
| CN201510353628.4 | | CONTENT FABRIC FOR A DISTRIBUTED FILE SYSTEM | EMC Corporation |
| CN201510358868.3 | | CLOUDBOOK | EMC Corporation |
| CN201510358888.0 | | DETERMINING SERVER LOCATION IN A DATA CENTER | EMC Corporation |
| CN201510358972.2 | | APPLICATION AND INFORMATION MOVEMENT IN A CLOUD ENVIRONMENT | EMC Corporation |
| CN201510359095.0 | | METHOD AND APPARATUS FOR DETECTING UNRESPONSIVENESS OF A PROCESS | EMC Corporation |
| CN201510359347.X | | DYNAMICALLY COMPOSED COMPUTE NODES COMPRISING DISAGGREGATED COMPONENTS | EMC Corporation |
| CN201510360058.1 | | METHOD AND APPARATUS FOR SOT-SWITCH IN STORAGE SYSTEM | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| CN201510363519 0.0 | | CACHE DATA PROCESSING METHOD AND APPARATUS | EMC Corporation |
| CN201510363535 .X | | VNX2 DRIVE MOVEMENT MANAGEMENT MECHANISM WITH PORTABLE DRIVE | EMC Corporation |
| CN201510363636 .7 | | DETERMINING THE PHYSICAL LOCATION OF A DEVICE | EMC Corporation |
| CN201510364946 .0 | | A DIGITAL DYNAMIC TESTING MODLE | EMC Corporation |
| CN201510364956 .4 | | METHOD AND APPARATUS OF AUTOMATIC ASSIGNMENT OF A DUMP | EMC Corporation |
| CN201510477813 .4 | | SYSTEM AND METHOD FOR SECURE MULTI-TENANCY IN DATADOMAIN OPERATING SYSTEM (DDOS), A PURPOSE BUILT BACKUP APPLIANCE (PBBA) OPERATING SYSTEM | EMC Corporation |
| CN201510564036 7 | | LEVELING IO | EMC Corporation |
| CN201510564838 .8 | | METHOD AND APPARATUS FOR COST-BASED LOAD BALANCING FOR PORT SELECTION | EMC Corporation |
| CN201510573799 8 | | REMOTE POWER MANAGEMENT DEVICES AND MANAGEMENT METHODS | EMC Corporation |
| CN201510587474 .5 | | METHOD AND APPARATUS FOR ENSURING DATA CONSISTENCY | EMC Corporation |
| CN201510589748 .4 | | METHOD AND APPARATUS OF LOG STORAGE OPTIMIZATION | EMC Corporation |
| CN201510590352 .1 | | METHOD AND APPARATUS FOR WHITE-BOX TESTING | EMC Corporation |
| CN201510590780 .4 | | CLOUD CONSISTENCY TECHNOLOGY | EMC Corporation |
| CN201510591086 .4 | | SERVER MANAGEMENT METHOD AND MANAGEMENT SYSTEM | EMC Corporation |
| CN201510592027 .9 | | METHOD AND APPARATUS FOR OPERATING SHINGLED MAGNETIC RECORDING DEVICE | EMC Corporation |
| CN201510595959 9 | | METHOD AND APPARATUS FOR SELECTING AN INCREMENTAL BACKUP APPROACH | EMC Corporation |
| CN201510604922 .8 | | INCREMENTAL BACKUP METHOD AND APPARATUS | EMC Corporation |
| CN201510608751 .6 | | METHOD AND APPARATUS FOR DATA STORAGE SYSTEM | EMC Corporation |
| CN201510609728 .9 | | METHOD AND APPARATUS FOR REDUCING CACHE DEVICE ONLINE | EMC Corporation |
| CN201510612283 .X | | A LOCATING METHOD AND A LOCATING DEVICE | EMC Corporation |
| CN201510614150 .6 | | METHOD AND APPARATUS FOR PROCESSING A MEDIA TYPE IN REST SOFTWARE ARCHITECTURE | EMC Corporation |
| CN201510614231 .6 | | METHOD AND APPARATUS FOR DETERMINING A PHYSICAL LOCATION OF A DEVICE | EMC Corporation |
| CN201510618564 .6 | | METHOD AND APPARATUS FOR LOCKING FILE IN MEMORY | EMC Corporation |
| CN201510622273 .4 | | METHOD AND DEVICE FOR CHECKING FALSE SHARING IN DATA BLOCK DELETION | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| CN201510622302.7 | | METHOD AND DEVICE FOR FINGERPRINT BASED STATUS DETECTION IN A DISTRIBUTED PROCESSING SYSTEM | EMC Corporation |
| CN201510622723.X | | A METHOD AND DEVICE FOR RETRIEVING TEST CASE BASED ON CODE COVERAGE | EMC Corporation |
| CN201510622808.8 | | STORAGE METHOD AND DEVICE FOR SSD DRIVES | EMC Corporation |
| CN201510623730.1 | | USING A FLAG TO SELECTIVELY PERMIT CONFIGURATION CHANGES TO A DATA STORAGE OBJECT HAVING AN ACTIVATED FEATURE | EMC Corporation |
| CN201510624888.0 | | METHOD AND APPARATUS FOR REDUNDANT ARRAYS OF INDEPENDENT DISKS | EMC Corporation |
| CN201510628051.3 | | APPARATUS FOR DATA STORAGE DEVICE AND METHOD THEREOF | EMC Corporation |
| CN201510640198.4 | | MEMORY CENTRIC DATABASE ARCHITECTURE | EMC Corporation |
| CN201510642171.9 | | CONVERTING COMPLEX STRUCTURE OBJECTS INTO FLATTENED DATA | EMC Corporation |
| CN201510663235.3 | | METHOD AND APPARATUS FOR RECLAIMING MEMORY BLOCKS IN SNAPSHOT STORAGE SPACE | EMC Corporation |
| CN201510664336.2 | | METHOD AND APPARATUS FOR PRESENTING STATUS OF STORAGE CLUSTER | EMC Corporation |
| CN201510847327.7 | | METHOD AND APPARATUS FOR SIMULATING SLOW STORAGE DISK | EMC Corporation |
| CN201510882689.X | | METHODS AND APPARATUS FOR RATIONAL COMPRESSION AND DECOMPRESSION OF NUMBERS | EMC Corporation |
| CN201510929192.9 | | METHOD AND APPARATUS FOR PROVIDING ACCESS OF CONTENT RESOURCES | EMC Corporation |
| CN201510975001.2 | | METHOD AND APPARATUS FOR PATH SELECTION OF STORAGE SYSTEMS | EMC Corporation |
| CN201510981602.4 | | METHOD AND APPARATUS FOR CONTROLLING READING DATA FROM STORAGE SYSTEMS | EMC Corporation |
| CN201510982223.7 | | METHOD AND DEVICE FOR DETERMINING CAUSES OF PERFORMANCE DEGRADATION FOR STORAGE SYSTEMS | EMC Corporation |
| CN201510983346.2 | | METHOD AND APPARATUS FOR MULTI-LEVEL DATA PROTECTION IN STORAGE SYSTEMS | EMC Corporation |
| CN201510994736.X | | IMPROVING BACKUP PERFORMANCE USING DATA ALLOCATION OPTIMIZATION | EMC Corporation |
| CN201511000869.7 | | DE-DUPLICATING DISTRIBUTED FILE SYSTEM USING CLOUD-BASED OBJECT STORE | EMC Corporation |
| CN201511001195.2 | | METHOD AND DEVICE FOR DISTRIBUTED DATA PROCESSING | EMC Corporation |
| CN201511001586.4 | | METHOD AND APPARATUR FOR SUPPLYING POWER TO A PROCESSOR | EMC Corporation |
| CN201511016976.9 | | METHOD AND APPARATUS FOR DETERMINING DOCUMENT SET SIMILAR TO TARGET DOCUMENT AMONG MULTIPLE DOCUMENTS | EMC Corporation |
| CN201511017523.8 | | METHOD AND APPARATUS FOR FACILITATING STORAGE SYSTEM RECOVERY AND RELEVANT | EMC Corporation |

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|---|---|---|---|
| | | STORAGE SYSTEM | |
| CN201511017541.6 | | APPARATUS AND METHOD FOR DATA PROCESSING | EMC Corporation |
| CN201511017667.3 | | METHOD AND APPARATUS FOR STORAGE SYSTEM | EMC Corporation |
| CN201511018824.2 | | METHOD AND APPARATUS FOR COMPUTING DEVICE | EMC Corporation |
| CN201511019081.0 | | DISK DRIVE SIMULATION METHOD AND APPARATUS | EMC Corporation |
| CN201511019083.X | | METHOD AND APPARATUS FOR CONTROLLING READING AND WRITING DISK ARRAYS | EMC Corporation |
| CN201511020927.2 | | METHOD AND APPARATUS FOR MANAGING DATA ACCESS | EMC Corporation |
| CN201511021163.9 | | METHOD AND APPARATUS FOR FACILITATING WEAR LEVELING OF SSD | EMC Corporation |
| CN201511021242.X | | METHOD AND DEVICE FOR CACHE ARRAY EXPANSION | EMC Corporation |
| CN201511021593.0 | | METHOD AND APPARATUS FOR OPERATING HYBRID STORAGE DEVICE | EMC Corporation |
| CN201511021598.3 | | METHOD AND DEVICE FOR RECOVERING DATA REPLICATION BETWEEN STORAGE DEVICES | EMC Corporation |
| CN201511023162.8 | | METHOD AND DEVICE FOR DATA REPLICATION | EMC Corporation |
| CN201511030883.1 | | METHOD AND DEVICE FOR CHARGING A BATTERY PACK | EMC Corporation |
| CN201511030884.6 | | BACKUP COMMUNICATION METHOD AND APPARATUS | EMC Corporation |
| CN201511031818.0 | | METHOD AND APPARATUS FOR CLOUD SYSTEM | EMC Corporation |
| CN201511036301.0 | | RESOLVING WRITE PRESSURE USING EXISTING BACKUP APPLIANCE AS ADDITIONAL PRIMARY STORAGE | EMC Corporation |
| CN201610103823.6 | | METHOD AND APPARATUS FOR ENSURING RELIABILITY OF A MAPPED REDUNDANT ARRAY OF INDEPENDENT DISKS | EMC Corporation |
| CN201610105872.3 | | METHOD AND APPARATUS FOR DATA PROCESSING | EMC Corporation |
| CN201610134634.5 | | DATA MOVEMENT AMONG DISTRIBUTED DATA CENTERS | EMC Corporation |
| CN201610136881.9 | | METHOD AND APPARATUS FOR CONTROLLING A NETWORK NODE | EMC Corporation |
| CN201610141383.3 | | METHOD AND APPARATUS FOR VIDEO SURVEILLANCE | EMC Corporation |
| CN201610141843.2 | | METHOD AND APPARATUS FOR DATA MOVING OF STORAGE DEVICES | EMC Corporation |
| CN201610144505.4 | | METHOD AND APPARATUS FOR DATA STORAGE SERVICE | EMC Corporation |
| CN201610148027.4 | | METHOD AND APPARATUS FOR MANAGING FAILURE OF DEVICE | EMC Corporation |
| CN201610148028.9 | | METHOD AND DEVICE FOR DATA BACKUP | EMC Corporation |

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|---|---|---|---|
| CN201610148041.4 | | RACK-MOUNTED SERVER | EMC Corporation |
| CN201610149678.5 | | METHOD AND DEVICE OF POSITIONING | EMC Corporation |
| CN201610150685.7 | | METHOD AND APPARATUS FOR STORAGE SYSTEM | EMC Corporation |
| CN201610151098.X | | METHOD AND APPARATUS FOR CLASSIFYING FAILURE | EMC Corporation |
| CN201610151489.1 | | EVALUATION FOR REBUILDING PERFORMANCE OF REDUNDANT ARRAY OF INDEPENDENT DISKS | EMC Corporation |
| CN201610154088.1 | | STORAGE MANAGEMENT METHOD AND STORAGE DEVICE | EMC Corporation |
| CN201610154141.8 | | DEVICE AND METHOD FOR TESTING CONDITION OF A BATTERY | EMC Corporation |
| CN201610154144.1 | | METHOD AND APPARATUS OF STORAGE MANAGEMENT | EMC Corporation |
| CN201610154618.2 | | METHOD AND APPARATUS FOR PROCESSING OBJECTS TO BE SEARCHED | EMC Corporation |
| CN201610158006.0 | | METHOD AND DEVICE FOR SEARCHING CHARACTER STRING | EMC Corporation |
| CN201610159112.0 | | CONVERGING OF DATA MANAGEMENT AND DATA ANALYTICS | EMC Corporation |
| CN201610159266.X | | METHOD AND DEVICE FOR HANDLING ERRORS IN STORAGE SYSTEM | EMC Corporation |
| CN201610162002.X | | METHOD AND APPARATUS FOR STORING DATA | EMC Corporation |
| CN201610162005.3 | | METHOD AND APPARATUS FOR REBUILDING REDUNDANT ARRAY OF INDEPENDENT DISKS | EMC Corporation |
| CN201610162398.8 | | METHOD AND APPARATUS FOR DELIVERING SOFTWARE SOLUTIONS | EMC Corporation |
| CN201610162636.5 | | METHOD, DEVICE, AND COMPUTER PROGRAM PRODUCT FOR TESTING CODE | EMC Corporation |
| CN201610162663.2 | | HARD DISK ASSEMBLY, CHASSIS ASSEMBLY, AND SERVER DEVICE | EMC Corporation |
| CN201610162742.3 | | FULL TEXT SEARCH BASED ON CATEGORIZING | EMC Corporation |
| CN201610180426.9 | | VIRTUAL POINT IN TIME ACCESS BETWEEN SNAPSHOTS | EMC Corporation |
| CN201610184567.8 | | METHOD AND SYSTEM FOR MALWARE DETECTION IN VIRTUAL MACHINES | EMC Corporation |
| CN20161019113.1 | | CREATING REPLICAS AT USER-DEFINED POINTS IN TIME | EMC Corporation |
| CN201610204131.0 | | METHOD AND SYSTEM FOR SYNCHRONIZING AN INDEX OF DATA BLOCKS STORED IN A STORAGE SYSTEM USING A SHARED STORAGE MODULE | EMC Corporation |
| CN201610204618.9 | | CONSISTENT TRANSITION FROM ASYNCHRONOUS TO SYNCHRONOUS REPLICATION IN HASH-BASED STORAGE SYSTEMS | EMC Corporation |
| CN201610214445.9 | | SECURITY DETECTION | EMC Corporation |
| CN201610228110.2 | | METHOD AND SYSTEM FOR PROVIDING ACCESS OF A STORAGE SYSTEM USING A SHARED | EMC Corporation |

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|---|---|---|---|
| | | STORAGE MODULE AS A TRANSPORT MECHANISM | |
| CN201610262843.8 | | REMOTE ACCESS TESTING SYSTEM AND METHOD | EMC Corporation |
| CN201610417408.8 | | METHODS AND APPARATUS FOR MANAGING A STORAGE SYSTEM | EMC Corporation |
| CN201610417576.7 | | STORAGE DEVICE AND METHOD FOR SUPPLYING POWER TO STORAGE DEVICE | EMC Corporation |
| CN201610417578.6 | | METHOD AND DEVICE FOR POWER SUPPLY TO PROCESSOR | EMC Corporation |
| CN201610421617.X | | METHOD AND DEVICE FOR DATA BACKUP | EMC Corporation |
| CN201610422872.6 | | ROD FOR USE IN RACK AND HOLDING DEVICE FOR USE IN COOPERATION WITH RACK | EMC Corporation |
| CN201610428405.4 | | METHOD AND SYSTEM FOR MANAGING MEMORY IN STORAGE DEVICE | EMC Corporation |
| CN201610429398.X | | METHOD AND DEVICE FOR REPRODUCING I/O FOR STORAGE SYSTEM | EMC Corporation |
| CN201610431451.X | | METHOD AND SYSTEM FOR MANAGING STORAGE DEVICE | EMC Corporation |
| CN201610431589.X | | METHOD AND SYSTEM FOR MANAGING MEMORY IN STORAGE DEVICE | EMC Corporation |
| CN201610431737.8 | | METHOD FOR FILTERING DOCUMENTS AND ELECTRONIC DEVICE | EMC Corporation |
| CN201610431738.2 | | I/O CARD FOR STORAGE DEVICE AND STORAGE DEVICE | EMC Corporation |
| CN201610440621.0 | | GOVERNED PLACEMENT OF DATA ANALYTIC RESULTS | EMC Corporation |
| CN201610451127.4 | | A METHOD, SYSTEM, AND COMPUTER PROGRAM PRODUCT FOR FAULT PROCESSING | EMC Corporation |
| CN201610452126.1 | | METHOD AND APPARATUS FOR VIRTUAL MACHINE | EMC Corporation |
| CN201610453751.8 | | DATA PROCESSING METHOD AND DEVICE | EMC Corporation |
| CN201610454208.X | | METHOD AND DEVICE FOR PROCESSING A MULTI-LANGUAGE TEXT | EMC Corporation |
| CN201610454286.X | | METHOD AND APPARATUS FOR SELECTING RAID LEVEL FOR MAPPED RAID | EMC Corporation |
| CN201610454287.4 | | METHOD AND DEVICE FOR COMPRESSING METADATA FOR FILE SYSTEM | EMC Corporation |
| CN201610454607.6 | | METHOD AND APPARATUS FOR ADJUSTING THROUGHPUT OF STORAGE DEVICE | EMC Corporation |
| CN201610454617.X | | METHOD AND DEVICE OF STORAGE MANAGEMENT | EMC Corporation |
| CN201610454623.5 | | METHOD AND DEVICE FOR MANAGING INPUT/OUTPUT (I/O) OF STORAGE DEVICE | EMC Corporation |
| CN201610454922.9 | | METHOD AND DEVICE FOR FAILOVER | EMC Corporation |
| CN201610457468.2 | | METHOD AND DEVICE OF MANAGING A DOCUMENT INDEX | EMC Corporation |
| CN201610459022 | | METHOD AND SYSTEM FOR MANAGING STORAGE | EMC Corporation |

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|---|---|---|---|
| .3 | | SYSTEM | |
| CN201610459148.0 | | RESOURCE ORCHESTRATION METHOD AND DEVICE USING OBJECT-ORIENTED LANGUAGE | EMC Corporation |
| CN201610459336 3 | | TRUST OVERLAYS FOR DISAGGREGATED INFRASTRUCTURES | EMC Corporation |
| CN201610459343.3 | | METHOD AND SYSTEM FOR MANAGING STORAGE SYSTEM | EMC Corporation |
| CN201610459374.9 | | DATA ANALYSIS IN A STORAGE SYSTEM | EMC Corporation |
| CN201610459979.8 | | METHOD AND SYSTEM FOR LOCKING STORAGE AREA IN STORAGE SYSTEM | EMC Corporation |
| CN201610461042.4 | | METHOD AND SYSTEM FOR TRANSMITTING MESSAGE IN STORAGE SYSTEM | EMC Corporation |
| CN201610461439.3 | | DISTRIBUTED WORK FLOW USING DATABASE REPLICATION | EMC Corporation |
| CN201610471278.6 | | DATA STORAGE SYSTEM HAVING SEGREGATED CONTROL PLANE AND/OR SEGREGATED DATA PLANE ARCHITECTURE | EMC Corporation |
| CN201610471525.2 | | COMPUTING ERASURE METADATA AND DATA LAYOUT PRIOR TO STORAGE USING A PROCESSING PLATFORM | EMC Corporation |
| CN201610489109.5 | | DYNAMIC RESILIENCE IN FLASH ACCELERATION TIERS | EMC Corporation |
| CN201610496812.9 | | DELEGATED MEDIA TRANSLATION LAYER IN A STORAGE APPLIANCE | EMC Corporation |
| CN201610619574.6 | | DETERMINING PHYSICAL LOCATION OF ELECTRONIC DEVICE | EMC Corporation |
| DE(EDV1)19960 636330 | DE(EDV1)69 636330D | SYSTEM AND METHOD FOR ON-LINE, REAL-TIME, DATA MIGRATION | EMC Corporation |
| DE(EDV1)60224 598.2 | DE(EP)60224 598.2-08 | REVERSING A COMMUNICATION PATH BETWEEN STORAGE DEVICES | EMC Corporation |
| DE(EDV1)84201 482.1 | DE(EDV1)31 77097.5 | HIERACHIAL MEMORY RING PROTECTION SYSTEM USING COMPARISIONS OF REQUESTED AND PREV…. | EMC Corporation |
| DE(EDV1)84201 484.7 | DE(EDV1)31 77242 | DATA PROCESSING SYSTEM HAVING A UNIQUE ADDRESS TRANSLATION UNIT | EMC Corporation |
| DE(EP)00307999. 3 | DE60048191. 3 | METHOD FOR THE TRANSPARENT EXCHANGE OF LOGICAL VOLUMES IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| DE(EP)00311737. 1 | DE(EP)60047 398.8 | FIBRE CHANNEL DATA STORAGE SYSTEM FAIL-OVER MECHANISM | EMC Corporation |
| DE(EP)00911736. 7 | DE(EP)60034 327.8 | METHODS AND SYSTEMS FOR IMPLEMENTING SHARED DISK ARRAY MANAGEMENT FUNCTIONS | EMC Corporation |
| DE(EP)00948778. 6 | DE(EP)60028 778.5 | SYSTEM AND METHODS FOR MAINTAINING AND DISTRIBUTING PERSONAL SECURITY DEVICES | EMC Corporation |
| DE(EP)00959718. 8 | DE60041002. 1 | CRASH RECOVERY WITHOUT COMPLETE REMIRROR | EMC Corporation |
| DE(EP)01102501. 2 | | CONTROLLING ACCESS TO A STORAGE DEVICE | EMC Corporation |
| DE(EP)02024812. 6 | DE(EP)60239 179.2-08 | DYNAMIC RDF | EMC Corporation |

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|---|---|---|---|
| DE(EP)02795496.5 | DE(EP)60242766.5 | EFFICIENT SEARCH FOR MIGRATION AND PURGE CANDIDATES | EMC Corporation |
| DE(EP)02795657.2 | DE(EP)1461720 | DYNAMIC FILE ACCESS CONTROL AND MANAGEMENT | EMC Corporation |
| DE(EP)03783599.8 | DE(EP)60344333.8 | SYSTEMS AND METHODS FOR RESTRIPING FILES IN A DISTRIBUTED FILE SYSTEM | EMC Corporation |
| DE(EP)04002583.5 | DE(EP)60049269.9 | METHOD AND APPARATUS FOR MAINTAINING CONSISTENCY OF DATA STORED IN A GROUP OF MIRRORING DEVICES | EMC Corporation |
| DE(EP)04010899.5 | DE(EP)602004005785.1 | DYNAMIC ROUTING THROUGH A CONTENT DISTRIBUTION NETWORK | EMC Corporation |
| DE(EP)04104115.3 | DE(EP)602004003874.1 | TECHNIQUES FOR SECURING ELECTRONIC IDENTITIES | EMC Corporation |
| DE(EP)04106294.4 | DE(EP)602004010056.0 | METHODS AND SYSTEMS FOR MANAGING NETWORK TRAFFIC BY MULTIPLE CONSTRAINTS | EMC Corporation |
| DE(EP)04753325.2 | DE602004022660.2 | SYSTEM AND METHOD FOR TRANSFERING DATA FROM A SOURCE MACHINE TO A TARGET MACHINE | EMC Corporation |
| DE(EP)04760929.2 | DE(EP)602004012996.8 | METHOD AND APPARATUS FOR AUTHENTICATION OF USERS AND WEB SITES | EMC Corporation |
| DE(EP)04801039.1 | DE(EP)602004039379.5 | DATA STORAGE SYSTEM | EMC Corporation |
| DE(EP)04810425.1 | DE602004042006.9 | METHOD FOR PROVIDING A FLAT VIEW OF A HIERARCHICAL NAMESPACE WITHOUT REQUIRING UNIQUE LEAF NAMES | EMC Corporation |
| DE(EP)04813591.7 | DE602004022589.4-08 | VIRTUAL VOICEPRINT SYSTEM AND METHOD FOR GENERATING | EMC Corporation |
| DE(EP)04813604.8 | DE(EP)602004043766.2 | SYSTEM AND METHOD FOR PROVIDING IMPROVED CLAIMANT AUTHENTICATION | EMC Corporation |
| DE(EP)05101066.8 | DE(EP)602005000026.1 | ISOLATING MULTIPLE AUTHENTICATION CHANNELS, EACH USING MULTIPLE AUTHENTICATION MODELS | EMC Corporation |
| DE(EP)05106967.2 | DE(EP)602005016867.2 | PRIVILEGED NETWORK ROUTING | EMC Corporation |
| DE(EP)05712935.5 | DE(EP)602005039474.5 | METHOD AND APPARATUS OF AUTHENTICATION OF USERS AND COMMUNICATIONS RECEIVED FROM COMPUTER SYSTEMS | EMC Corporation |
| DE(EP)05854600.3 | DE(EP)1828920 | CONSUMER INTERNET AUTHENTICATION SERVICE | EMC Corporation |
| DE(EP)06115645.1 | DE(EP)602006012250.0 | SYSTEM AND METHOD FOR ENSURING A DEVICE USES THE CORRECT INSTANCE OF A NETWORK SERVICE | EMC Corporation |
| DE(EP)06123514.9 | DE(EP)602006040590.1 | TECHNIQUES FOR PRESERVING AND MANAGING IDENTITIES IN AN AUDIT LOG | EMC Corporation |
| DE(EP)06718171.9 | DE(EP)602006037099.7 | METHODS AND APPARATUS FOR MANAGING DELETION OF DATA | EMC Corporation |
| DE(EP)06718172.7 | DE(EP)602006037100.4 | METHODS AND APPARATUS FOR MANAGING DELETION OF DATA | EMC Corporation |
| DE(EP)06735936.4 | DE(EP)602006032381.6 | CHECKPOINT AND CONSISTENCY MARKERS | EMC Corporation |
| DE(EP)07103070.4 | DE(EP)602007029596.3 | REGISTRATION OF PEER-TO-PEER SERVICES | EMC Corporation |

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|---|---|---|---|
| DE(EP)07117897.4 | DE(EP)602007028054.0 | MULTIPLE SECURITY ACCESS MECHANISMS FOR A SINGLE IDENTIFIER | EMC Corporation |
| DE(EP)07755303.0 | DE602007039243.8 | EFFICIENT DATA STORAGE USING RESEMBLANCE OF DATA SEGMENTS | EMC Corporation |
| DE(EP)07757004.2 | | SYSTEMS AND METHODS FOR OBTAINING ULTRA-HIGH DATA AVAILABILITY AND GEOGRAPHIC DISASTER TOLERANCE | EMC Corporation |
| DE(EP)08102532.2 | DE(EP)602008000602.6 | VIRTUALIZED FEDERATED ROLE PROVISIONING | EMC Corporation |
| DE(EP)08163057.6 | DE(EP)602005026343.8 | KEY DISTRIBUTION | EMC Corporation |
| DE(EP)10161223.2 | DE(EP)602010001909.8 | SYSLOG MESSAGE ROUTING SYSTEMS AND METHODS | EMC Corporation |
| DE(EP)1996930609.1 | DE(EP)69622253 | SYSTEM FOR MIGRATING DATA BY SELECTING A FIRST OR SECOND TRANSFER MEANS BASED ON THE STATUS OF A DATA ELEMENT MAP | EMC Corporation |
| DE(EP)19996007631 | DE(EP)699076311 | ACCESS TO CONTENT ADDRESSABLE DATA OVER A NETWORK | EMC Corporation |
| DE(EP)20006031499 | DE(EP)60031499 | METHOD FOR TRANSMITTING FIBRE-CHANNEL AND NON-FIBRE CHANNEL SIGNALS THROUGH COMMON CABLE | EMC Corporation |
| DE(EP)60016371 | DE(EP)60016371 | METHOD AND APPARATUS FOR MAINTAINING CONSISTENCY OF DATA STORED IN A GROUP OF MIRRORING DEVICES | EMC Corporation |
| DE(EP)60018803.5-08 | DE(EP)1244966 | METHOD AND APPARATUS FOR MANAGING INFORMATION RELATED TO STORAGE ACTIVITIES OF DATA STORAGE SYSTEMS | EMC Corporation |
| DE(EP)60022196 | DE(EP)60022196 | DATA STORAGE SYSTEM | EMC Corporation |
| DE(EP)602004012987.9 | DE(EP)602004012987.9 | DATA STORAGE SYSTEM | EMC Corporation |
| DE(EP)602005047587.7 | DE(EP)1569085 | METHODS AND APPARATUS FOR INCREASING DATA STORAGE CAPACITY | EMC Corporation |
| DE(EP)6020060266.8 | DE(EP)1915708 | DATA OBJECT SEARCH AND RETRIEVAL | EMC Corporation |
| DE(EP)602007044632.5 | DE(EP)1926259 | CONTROL OF COMMUNICATION PORTS OF COMPUTING DEVICES USING POLICY-BASED DECISIONS | EMC Corporation |
| DE(EP)602008012601.3 | DE(EP)2045997 | IDENTITY-BASED ADDRESS NORMALIZATION | EMC Corporation |
| DE(EP)602011023507.9 | DE(EP)2622456 | OPTIMIZED RECOVERY | EMC Corporation |
| DE(EP)60203773.5-08 | DE(EP)60203773 | HIERARCHICAL APPROACH TO IDENTIFYING CHANGING DEVICE CHARACTERISTICS | EMC Corporation |
| DE(EP)60212922.2-08 | DE(EP)60212922 T2 | REVERSING A COMMUNICATION PATH BETWEEN STORAGE DEVICES | EMC Corporation |
| DE(EP)60247854.5 | DE(EP)1507207 | HIERARCHICAL APPROACH TO IDENTIFYING CHANGING DEVICE CHARACTERISTICS | EMC Corporation |
| DE(EP)60302027.5 | DE(EP)60302027.5 | ENRICHED TREE FOR A CONTENT DISTRIBUTION NETWORK | EMC Corporation |
| DE(EP)69727083 | DE(EP)69727083 | DATA VALIDATION SYSTEM FOR A GROUP OF DATA STORAGE DISKS | EMC Corporation |

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|---|---|---|---|
| DE(EP)698008081-08 | DE(EP)69800808 | RELIABLE ARRAY OF DISTRIBUTED COMPUTING NODES | EMC Corporation |
| DE(EP)69831944 | DE(EP)69831944 | APPARATUS AND METHOD FOR BACKUP OF A DISK STORAGE SYSTEM | EMC Corporation |
| DE(EP)69919404 | DE(EP)69919404 | ONLINE DEBUGGING AND TRACING SYSTEM AND METHOD | EMC Corporation |
| DE(EP)69927258 | DE(EP)69927258 | METHOD AND APPARATUS FOR CASCADING DATA THROUGH REDUNDANT DATA STORAGE UNITS | EMC Corporation |
| DE(EP)69930307.9-08 | DE(EP)69930307 | DATA STORAGE SYSTEM | EMC Corporation |
| DE(EP)87401108.3 | DE(EP)3773741.4 | COMMUT 16 | EMC Corporation |
| DE(EP)90311828.9 | DE(EP)0483421 | NETWORK COMMUNICATION SYSTEM | EMC Corporation |
| DE(EP)90916922.9 | DE(EP)69024367.7 | METHOD AND APPARATUS FOR SECURE IDENTIFICATION AND VERIFICATION | EMC Corporation |
| DE(EP)91910198.1 | DE(EP)69133047608 | METHOD AND APPARATUS FOR PERSONAL IDENTIFICATION | EMC Corporation |
| DE(EP)93301620.6 | DE(EP)69318600.3 | ON-LINE MODULE REPLACEMENT IN A MULTLIPLE MODULE DATA PROCESSING SYSTEM | EMC Corporation |
| DE(EP)93301685.9 | DE(EP)69323225.0 | HIGH AVAILABILITY DISK ARRAYS | EMC Corporation |
| DE(EP)93301686.7 | DE(EP)69320388.9 | IMPROVEMENTS FOR HIGH AVAILABILITY DISK ARRAYS | EMC Corporation |
| DE(EP)93925165.8 | DE(EP)69326775.5 | METHOD AND APPARATUS FOR AUTHENTICATION OF CLIENT SERVER COMMUNICATION | EMC Corporation |
| DE(EP)94901649.7 | DE(EP)69322415.00 | INRUSH CURRENT LIMITER | EMC Corporation |
| DE(EP)94914223.6 | DE(EP)0695443 | REMOTE DATA MIRRORING | EMC Corporation |
| DE(EP)95920589.9 | DE(EP)69523588.5 | APPARATUS AND METHOD FOR EVENT CORRELATION AND PROBLEM REPORTING | EMC Corporation |
| DE(EP)95928682.4 | DE(EP)69507940.9 | COMPUTER METHOD AND APPARATUS FOR ASYNCHRONOUS ORDERED OPERATIONS | EMC Corporation |
| DE(EP)95944494.4 | DE(EP)69500424.7 | METHOD AND APPARATUS TO SECURE DISTRIBUTED DIGITAL DIRECTORY OBJECT CHANGES | EMC Corporation |
| DE(EP)96919202.0 | DE(EP)96919009.4 | RESERVED CYLINDER FOR SCSI DEVICE WRITE BACK CACHE | EMC Corporation |
| DE(EP)96919430.7 | DE(EP)69601868.3 | METHOD FOR MANAGING GLOBALLY DISTRIBUTED SOFTWARE COMPONENTS | EMC Corporation |
| DE(EP)96923601.7 | DE(EP)69601374.6 | METHOD AND APPARATUS FOR SYNCHRONIZING DATA TRANSMISSION WITH ON-DEMAND LINKS OF A NETWORK | EMC Corporation |
| DE(EP)96923633.0 | DE(EP)69616329.2 | System for replicating and associating file types with application programs among plurality of partitions in a server | EMC Corporation |
| DE(EP)96925331.9 | DE(EP)69619531.3 | DYNAMIC LOAD BALANCING | EMC Corporation |
| DE(EP)96928861.2 | DE(EP)96932406.7 | DATA STORAGE SYSTEM | EMC Corporation |

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|---|---|---|---|
| DE(EP)97907877.1 | DE(EP)0883845 | ORTHOGONAL SIGNAL MULTIPLEXING SYSTEM | EMC Corporation |
| DE(EP)97910942.8 | DE(EP)0938705 | FAIL-OVER SWITCHING SYSTEM | EMC Corporation |
| DE(EP)97927901.5 | DE(EP)69710578.4 | METHOD FOR INDEPENDENT AND SIMULTANEOUS ACCESS TO A COMMON DATA SET | EMC Corporation |
| DE(EP)97942453.8 | DE(EP)69708932.0 | FILE TRANSFER UTILITY WHICH EMPLOYS AN INTERMEDIATE DATA STORAGE SYSTEM | EMC Corporation |
| DE(EP)97944532.7 | DE(EP)0950220 | DYNAMICALLY UPGRADEABLE DISK ARRAY SYSTEM AND METHOD | EMC Corporation |
| DE(EP)98307410.5 | DE(EP)0932096 | APPARATUS AND METHOD OF ACCESSING TARGET DEVICES ACROSS A BUS UTILIZING INITIATOR IDENTIFIERS | EMC Corporation |
| DE(EP)99941177.0 | DE(EP)69921289.8-08 | METHOD FOR EXCHANGING VOLUMES IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| DE10048402.6 | DE10048402 | DATA STORAGE SYSTEM | EMC Corporation |
| DE10084964.4 | DE10084964 | SYSTEM AND METHOD FOR SECURE STORAGE, TRANSFER AND RETRIEVAL OF CONTENT ADDRESSABLE INFORMATION | EMC Corporation |
| DE10124482.7 | DE10124482 | FAULT TOLERANT, LOW LATENCY SYSTEM RESOURCE WITH HIGH LEVEL LOGGING OF SYSTEM RESOURCE TRANSACTIONS AND CROSS-SERVER MIRRORED HIGH LEVEL LOGGING OF SYSTEM RESOURCE TRANSACTIONS | EMC Corporation |
| DE10197063.3-31 | DE10197063 | METHOD AND APARATUS FOR PREVENTING UNAUTHORIZED ACCESS BY A NETWORK DEVICE | EMC Corporation |
| DE102004064269.9 | | METHODS AND APPARATUS FOR GENERATING A CONTENT ADDRESS TO INDICATE DATA UNITS WRITTEN TO A STORAGE SYSTEM PROXIMATE IN TIME | EMC Corporation |
| DE10297001.7 | DE10297001 | INFORMATION REPLICATION SYSTEM HAVING ENHANCED ERROR DETECTION AND RECOVERY | EMC Corporation |
| DE10392181.8 | | DYNAMIC RDF GROUPS | EMC Corporation |
| DE112004002315.7 | | VIRTUAL ORDERED WRITES FOR MULTIPLE STORAGE DEVICES | EMC Corporation |
| DE200310393595 | DE10393595 | METHOD AND APPARATUS FOR PROVISIONING STORAGE RESOURCES | EMC Corporation |
| DE20051036291.5 | | TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |
| DE60042055.8-08 | DE60042055.8-08 | APPARATUS FOR ENABLING INDEPENDENT ACCESS TO REPLICATED DATA | EMC Corporation |
| DE60042225.9 | DE60042225.9 | METHODS AND SYSTEMS FOR IMPLEMENTING SHARED DISK ARRAY MANAGEMENT FUNCTIONS | EMC Corporation |
| DE91309497.5 | DE69130279.0 | On-Line Reconstruction of a Failed Redundant Array System | EMC Corporation |
| DE91906246.3 | DE69132511.1 | METHOD AND APPARATUS FOR ASSIGNING SIGNATURES TO IDENTIFY MEMBERS OF A SET OF MASS OF STORAGE DEVICES | EMC Corporation |
| DE99900240.5 | DE69902749.7 | CONTENT ADDRESSABLE INFORMATION ENCAPSULATION, REPRESENTATION, AND TRANSFER | EMC Corporation |

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|---|---|---|---|
| DE99967760.2 | EP1058889 | DATA STORAGE SYSTEM | EMC Corporation |
| EDV84201484.7 | EDV149858 | DATA PROCESSING SYSTEM HAVING A UNIQUE ADDRESS TRANSLATION UNIT | EMC Corporation |
| EP(DV)04002583.5 | EP1426863 | METHOD AND APPARATUS FOR MAINTAINING CONSISTENCY OF DATA STORED IN A GROUP OF MIRRORING DEVICES | EMC Corporation |
| EP(DV)09164519.2 | | METHODS AND APPARATUS FOR TRANSFERRING CONTENT FROM A STORAGE SYSTEM | EMC Corporation |
| EP(DV1)06113558.8 | EP(DV1)1684178 | REVERSING A COMMUNICATION PATH BETWEEN STORAGE DEVICES | EMC Corporation |
| EP(DV1)20010203306.4 | EP(DV1)1160654 | SYSTEM AND METHOD FOR ON-LINE, REAL-TIME, DATA MIGRATION | EMC Corporation |
| EP00125969.6 | EP1122629 | CONTROLLING ACCESS TO A STORAGE DEVICE | EMC Corporation |
| EP00125969.6 | EP1122629 | CONTROLLING ACCESS TO A STORAGE DEVICE | EMC Corporation |
| EP00125969.6 | EP1122629 | CONTROLLING ACCESS TO A STORAGE DEVICE | EMC Corporation |
| EP00307999.3 | EP1093051 | METHOD FOR THE TRANSPARENT EXCHANGE OF LOGICAL VOLUMES IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| EP00311601.9 | EP1111509 | APPARATUS FOR ENABLING INDEPENDENT ACCESS TO REPLICATED DATA | EMC Corporation |
| EP00311737.1 | EP1113363 | FIBRE CHANNEL DATA STORAGE SYSTEM FAIL-OVER MECHANISM | EMC Corporation |
| EP00910144.5 | EP1149475 | FUZZY COMMITMENT SCHEME | EMC Corporation |
| EP00911736.7 | EP1171820 | METHODS AND SYSTEMS FOR IMPLEMENTING SHARED DISK ARRAY MANAGEMENT FUNCTIONS | EMC Corporation |
| EP00944952.1 | EP1194852 | DATA STORAGE SYSTEM | EMC Corporation |
| EP00948778.6 | EP1201070 | SYSTEM AND METHODS FOR MAINTAINING AND DISTRIBUTING PERSONAL SECURITY DEVICES | EMC Corporation |
| EP00959718.8 | EP1250649 | CRASH RECOVERY WITHOUT COMPLETE REMIRROR | EMC Corporation |
| EP00959781.6 | EP1125201 | METHOD AND APPARATUS FOR MAINTAINING CONSISTENCY OF DATA STORED IN A GROUP OF MIRRORING DEVICES | EMC Corporation |
| EP00978803.5 | EP1244966 | METHOD AND APPARATUS FOR MANAGING INFORMATION RELATED TO STORAGE ACTIVITIES OF DATA STORAGE SYSTEMS | EMC Corporation |
| EP01102501.2 | | CONTROLLING ACCESS TO A STORAGE DEVICE | EMC Corporation |
| EP01910598.0 | | SYSTEM AND METHOD FOR REPRESENTING AND MAINTAINING REDUNDANT DATA SETS UTILIZING DNA TRANSMISSION ADN TRANSCRIPTION TECHNIQUES | EMC Corporation |
| EP01910686.3 | | HASH FILE SYSTEM AND METHOD FOR USE IN A COMMONALITY FACTORING SYSTEM | EMC Corporation |
| EP01923278.4 | | SYSTEM AND METHOD FOR DATA PROTECTION WITH MULTIDIMENSIONAL PARITY | EMC Corporation |
| EP01977554.3 | | SYSTEM FOR IDENTIFYING COMMON DIGITAL SEQUENCES | EMC Corporation |
| EP01991440.7 | DE60136739.1-08 | METHOD OF "SPLIT BRAIN" PREVENTION IN COMPUTER CLUSTER SYSTEMS | EMC Corporation |
| EP01991440.7 | EP1344133 | METHOD OF "SPLIT BRAIN" PREVENTION IN COMPUTER CLUSTER SYSTEMS | EMC Corporation |

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|---|---|---|---|
| EP02024809.2 | EP1313018 | HIERARCHICAL APPROACH TO IDENTIFYING CHANGING DEVICE CHARACTERISTICS | EMC Corporation |
| EP02024812.6 | EP1313016 | DYNAMIC RDF | EMC Corporation |
| EP02024812.6 | EP1313016 | DYNAMIC RDF | EMC Corporation |
| EP02024813.4 | EP1313017 | REVERSING A COMMUNICATION PATH BETWEEN STORAGE DEVICES | EMC Corporation |
| EP02706240.5 | | SYSTEM AND METHOD OF INDEXING UNIQUE ELECTRONIC MAIL MESSAGES AND USES FOR THE SAME | EMC Corporation |
| EP02749653.8 | DE60232414.9 | MIRRORING NETWORK DATA TO ESTABLISH VIRTUAL STORAGE AREA NETWORK | EMC Corporation |
| EP02749653.8 | EP1402420 | MIRRORING NETWORK DATA TO ESTABLISH VIRTUAL STORAGE AREA NETWORK | EMC Corporation |
| EP02749653.8 | EP1402420 | MIRRORING NETWORK DATA TO ESTABLISH VIRTUAL STORAGE AREA NETWORK | EMC Corporation |
| EP02749653.8 | EP1402420 | MIRRORING NETWORK DATA TO ESTABLISH VIRTUAL STORAGE AREA NETWORK | EMC Corporation |
| EP02756944.1 | | SYSTEM AND METHODS FOR PROVIDING METADATA FOR TRACKING OF INFORMATION ON A DISTRIBUTED FILE SYSTEM OF STORAGE DEVICES | EMC Corporation |
| EP02786369.5 | | EFFICIENT MANAGEMENT OF LARGE FILES | EMC Corporation |
| EP02795496.5 | EP1430400 | EFFICIENT SEARCH FOR MIGRATION AND PURGE CANDIDATES | EMC Corporation |
| EP02795657.2 | EP1461720 | DYNAMIC FILE ACCESS CONTROL AND MANAGEMENT | EMC Corporation |
| EP02795657.2 | EP1461720 | DYNAMIC FILE ACCESS CONTROL AND MANAGEMENT | EMC Corporation |
| EP03019062.3 | EP1416685 | ENRICHED TREE FOR A CONTENT DISTRIBUTION NETWORK | EMC Corporation |
| EP03783599.8 | EP1563411 | SYSTEMS AND METHODS FOR RESTRIPING FILES IN A DISTRIBUTED FILE SYSTEM | EMC Corporation |
| EP03790117.0 | | IDENTITY AUTHENTICATION SYSTEM AND METHOD | EMC Corporation |
| EP04010899.5 | EP1499074 | DYNAMIC ROUTING THROUGH A CONTENT DISTRIBUTION NETWORK | EMC Corporation |
| EP04025641.4 | EP1507207 | HIERARCHICAL APPROACH TO IDENTIFYING CHANGING DEVICE CHARACTERISTICS | EMC Corporation |
| EP04104115.3 | EP1521419 | TECHNIQUES FOR SECURING ELECTRONIC IDENTITIES | EMC Corporation |
| EP04106294.4 | EP1555780 | METHODS AND SYSTEMS FOR MANAGING NETWORK TRAFFIC BY MULTIPLE CONSTRAINTS | EMC Corporation |
| EP04715092.5 | EP1609071 | DATA STORAGE SYSTEM | EMC Corporation |
| EP04749593.2 | | METHOD AND APPARATUS FOR SYSTEM MANAGEMENT USING CODEBOOK CORRELATION WITH SYMPTOM EXCLUSION | EMC Corporation |
| EP04753325.2 | EP1629383 | SYSTEM AND METHOD FOR TRANSFERING DATA FROM A SOURCE MACHINE TO A TARGET MACHINE | EMC Corporation |

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| EP04753325.2 | EP1629383 | SYSTEM AND METHOD FOR TRANSFERING DATA FROM A SOURCE MACHINE TO A TARGET MACHINE | EMC Corporation |
| EP04753325.2 | EP1629383 | SYSTEM AND METHOD FOR TRANSFERING DATA FROM A SOURCE MACHINE TO A TARGET MACHINE | EMC Corporation |
| EP04760929.2 | EP1625690 | METHOD AND APPARATUS FOR AUTHENTICATION OF USERS AND WEB SITES | EMC Corporation |
| EP04783839.6 | | SYSTEM AND METHOD PROVIDING DISCONNECTED AUTHENTICATION | EMC Corporation |
| EP04801039.1 | EP1695221 | DATA TRANSFERRING METHOD | EMC Corporation |
| EP04810425.1 | EP1680730 | METHOD FOR PROVIDING A FLAT VIEW OF A HIERARCHICAL NAMESPACE WITHOUT REQUIRING UNIQUE LEAF NAMES | EMC Corporation |
| EP04813591.7 | EP1704560 | VIRTUAL VOICEPRINT SYSTEM AND METHOD FOR GENERATING VOICEPRINTS | EMC Corporation |
| EP04813591.7 | EP1074560 | VIRTUAL VOICEPRINT SYSTEM AND METHOD FOR GENERATING VOICEPRINTS | EMC Corporation |
| EP04813591.7 | EP1704560 | VIRTUAL VOICEPRINT SYSTEM AND METHOD FOR GENERATING VOICEPRINTS | EMC Corporation |
| EP04813604.8 | EP1704668 | SYSTEM AND METHOD FOR PROVIDING IMPROVED CLAIMANT AUTHENTICATION | EMC Corporation |
| EP05004139.1 | EP1569085 | METHODS AND APPARATUS FOR INCREASING DATA STORAGE CAPACITY | EMC Corporation |
| EP05101066.8 | EP1585285 | ISOLATING MULTIPLE AUTHENTICATION CHANNELS, EACH USING MULTIPLE AUTHENTICATION MODELS | EMC Corporation |
| EP05106967.2 | EP1624644 | PRIVILEGED NETWORK ROUTING | EMC Corporation |
| EP05109790.5 | EP1650926 | AUTOMATICALLY GRANTING ROOT ACCESS TO ADMINISTRATORS, WITHOUT REQUIRING THE ROOT PASSWORD | EMC Corporation |
| EP05712935.5 | EP1719283 | METHOD AND APPARATUS OF AUTHENTICATION OF USERS AND COMMUNICATIONS RECEIVED FROM COMPUTER SYSTEMS | EMC Corporation |
| EP05767801.3 | | SYSTEMS AND METHODS FOR PROVIDING DISTRIBUTED CACHE COHERENCE | EMC Corporation |
| EP05779993.4 | | SYSTEM AND METHOD OF FRAUD REDUCTION | EMC Corporation |
| EP05812016.3 | | CONFIGURING, MONITORING AND/OR MANAGING RESOURCE GROUPS INCLUDING A VIRTUAL MACHINE | EMC Corporation |
| EP05824350.2 | | CONTENT ADDRESSED STORAGE DEVICE CONFIGURED TO MAINTAIN CONTENT ADDRESS MAPPING | EMC Corporation |
| EP05854600.3 | EP1828920 | CONSUMER INTERNET AUTHENTICATION SERVICE | EMC Corporation |
| EP05854771.2 | | BACKUP INFORMATION MANAGEMENT | EMC Corporation |
| EP05855107.8 | | SYSTEMS AND METHODS FOR DYNAMIC DATA BACKUP | EMC Corporation |
| EP05855407.2 | | SYSTEMS AND METHODS FOR RESTORING DATA | EMC Corporation |
| EP06115645.1 | EP1748598 | SYSTEM AND METHOD FOR ENSURING A DEVICE USES THE CORRECT INSTANCE OF A NETWORK | EMC Corporation |

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|---|---|---|---|
| | | SERVICE | |
| EP06123514.9 | EP1811417 | TECHNIQUES FOR PRESERVING AND MANAGING IDENTITIES IN AN AUDIT LOG | EMC Corporation |
| EP06256154.3 | | METHOD AND SYSTEM FOR MULTI-LEVEL SECURE PERSONAL PROFILE MANAGEMENT AND ACCESS CONTROL TO THE ENTERPRISE MULTI-MODAL COMMUNICATION ENVIRONMENT IN HETEROGENEOUS CONVERGENT COMMUNICATION NETWORKS | EMC Corporation |
| EP06711236.7 | | SYSTEM AND METHOD FOR DETECTING AND MITIGATING DNS SPOOFING TROJANS | EMC Corporation |
| EP06711344.9 | | SYSTEM AND METHOD FOR DETECTING A PROXY BETWEEN A CLIENT AND SERVER | EMC Corporation |
| EP06718171.9 | EP1836621 | METHODS AND APPARATUS FOR MANAGING DELETION OF DATA | EMC Corporation |
| EP06718172.7 | EP1836622 | METHODS AND APPARATUS FOR MANAGING DELETION OF DATA | EMC Corporation |
| EP06735324.3 | | DERIVATIVE SEEDS | EMC Corporation |
| EP06735936.4 | EP1854012 | CHECKPOINT AND CONSISTENCY MARKERS | EMC Corporation |
| EP06750264.1 | DE(EP)60200 6015311.2 | METHODS AND APPARATUS FOR STORING CONTENT IN A FILE SYSTEM | EMC Corporation |
| EP06750264.1 | EP1894127 | METHODS AND APPARATUS FOR STORING CONTENT IN A FILE SYSTEM | EMC Corporation |
| EP06750265.8 | | METHODS AND APPARATUS FOR MANAGING THE REPLICATION OF CONTENT | EMC Corporation |
| EP06785805.0 | | CREATION OF A SINGLE CLIENT SNAPSHOT USING A CLIENT UTILITY | EMC Corporation |
| EP06796124.3 | EP1946514 | SYSTEM AND METHOD FOR CONDUCTING SECURE TRANSACTIONS | EMC Corporation |
| EP06801147.7 | EP1915708 | DATA OBJECT SEARCH AND RETRIEVAL | EMC Corporation |
| EP06801780.5 | | INFORMATION PROTECTION METHOD AND SYSTEM | EMC Corporation |
| EP06803964.3 | | AUTHENTICATION METHOD AND APPARATUS UTILIZING PROOF-OF-AUTHENTICATION MODULE | EMC Corporation |
| EP06816670.1 | | SYSTEM AND METHOD FOR DETECTING FRAUDULENT TRANSACTIONS | EMC Corporation |
| EP06848312.2 | DE60200601 1058.8 | CONTINUOUS BACKUP USING A MIRROR DEVICE | EMC Corporation |
| EP06848312.2 | EP1969472 | CONTINUOUS BACKUP USING A MIRROR DEVICE | EMC Corporation |
| EP06848312.2 | EP1969472 | CONTINUOUS BACKUP USING A MIRROR DEVICE | EMC Corporation |
| EP07100979.9 | | FEDERATION AND ATTESTATION OF ONLINE REPUTATIONS | EMC Corporation |
| EP07103070.4 | EP1838069 | REGISTRATION OF PEER-TO-PEER SERVICES | EMC Corporation |
| EP07104609.8 | EP1796001 | METHODS AND SYSTEMS FOR IMPLEMENTING SHARED DISK ARRAY MANAGEMENT FUNCTIONS | EMC Corporation |
| EP07117897.4 | EP1918845 | MULTIPLE SECURITY ACCESS MECHANISMS FOR A SINGLE IDENTIFIER | EMC Corporation |
| EP07120346.7 | EP1926259 | CONTROL OF COMMUNICATION PORTS OF COMPUTING DEVICES USING POLICY-BASED | EMC Corporation |

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| | | DECISIONS | |
| EP0775225 | | TRACKING OBJECTS MODIFIED BETWEEN BACKUP OPERATIONS | EMC Corporation |
| EP07755303.0 | EP2013740 | EFFICIENT DATA STORAGE USING RESEMBLANCE OF DATA SEGMENTS | EMC Corporation |
| EP07757004.2 | | SYSTEMS AND METHODS FOR OBTAINING ULTRA-HIGH DATA AVAILABILITY AND GEOGRAPHIC DISASTER TOLERANCE | EMC Corporation |
| EP07758941.4 | | HIGH EFFICIENCY PORTABLE ARCHIVE | EMC Corporation |
| EP07762088.8 | | AUTOMATED PRIORITY RESTORES | EMC Corporation |
| EP08102532.2 | EP1988486 | VIRTUALIZED FEDERATED ROLE PROVISIONING | EMC Corporation |
| EP08163057.6 | EP2012460 | KEY DISTRIBUTION | EMC Corporation |
| EP08164542.6 | EP2045997 | IDENTITY-BASED ADDRESS NORMALIZATION | EMC Corporation |
| EP08726953.6 | | AUTOMATED INFORMATION LIFE-CYCLE MANAGEMENT WITH THIN PROVISIONING | EMC Corporation |
| EP08727213.4 | | CLUSTER STORAGE USING SUBSEGMENTING | EMC Corporation |
| EP08727318.1 | | SEEDING REPLICATION | EMC Corporation |
| EP08796521.6 | | SYSTEM AND METHOD FOR REMOTE ASYNCHRONOUS DATA REPLICATION | EMC Corporation |
| EP08827264.6 | | SYSTEM AND METHOD FOR PROVIDING WRITE-ONCE-READ-MANY (WORM) STORAGE | EMC Corporation |
| EP08829858.3 | | DE-DUPLICATION IN VIRTUALIZED SERVER AND VIRTUALIZED STORAGE ENVIRONMENTS | EMC Corporation |
| EP08843327.1 | | POLICY BASED FILE MANAGEMENT | EMC Corporation |
| EP09153285.3 | EP2093971 | TECHNIQUES FOR ANONYMOUS INTERNET ACCESS | EMC Corporation |
| EP09153285.3 | EP2093971 | TECHNIQUES FOR ANONYMOUS INTERNET ACCESS | EMC Corporation |
| EP09153285.3 | EP2093971 | TECHNIQUES FOR ANONYMOUS INTERNET ACCESS | EMC Corporation |
| EP09153285.3 | EP2093971 | TECHNIQUES FOR ANONYMOUS INTERNET ACCESS | EMC Corporation |
| EP09153285.3 | EP2093971 | TECHNIQUES FOR ANONYMOUS INTERNET ACCESS | EMC Corporation |
| EP09156290.0 | | RESTRICTED USE INFORMATION CARDS | EMC Corporation |
| EP09812030.6 | | METHOD AND APPARATUS FOR MANAGING DATA OBJECTS OF A DATA STORAGE SYSTEM | EMC Corporation |
| EP09826391.6 | | DELTA COMPRESSION AFTER IDENTITY DEDUPLICATION | EMC Corporation |
| EP09839371.3 | | METHOD AND APPARATUS FOR PROCESSING DISTRIBUTED DATA | EMC Corporation |
| EP10161223.2 | EP2252038 | SYSLOG MESSAGE ROUTING SYSTEMS AND METHODS | EMC Corporation |
| EP10736429.1 | | SYSTEM AND METHOD FOR SECURE AND RELIABLE MULTI-CLOUD DATA REPLICATION | EMC Corporation |
| EP10740101.0 | | DATA PROCESSING SYSTEM USING CACHE-AWARE MULTIPATH DISTRIBUTION OF STORAGE COMMANDS AMONG CACHING STORAGE CONTROLLERS | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| EP10759144.8 | | DATA REDISTRIBUTION IN DATA REPLICATION SYSTEMS | EMC Corporation |
| EP10786489.4 | | SEGMENT DEDUPLICATION SYSTEM WITH ENCRYPTION OF SEGMENTS | EMC Corporation |
| EP10792440.9 | | SYSTEM AND METHOD FOR PROVIDING LONG-TERM STORAGE FOR DATA | EMC Corporation |
| EP10819153.7 | | SNAPSHOTTING OF A PERFORMANCE STORAGE SYSTEM IN A SYSTEM FOR PERFORMANCE IMPROVEMENT OF A CAPACITY OPTIMIZED STORAGE SYSTEM | EMC Corporation |
| EP10838050.2 | | SYSTEMS AND METHODS FOR FACILITATING DATA DISCOVERY | EMC Corporation |
| EP11153041.6 | | SYSTEM AND METHODS FOR PROVIDING METADATA FOR TRACKING OF INFORMATION ON A DISTRIBUTED FILE SYSTEM OF STORAGE DEVICES | EMC Corporation |
| EP11737579.0 | | SYSTEM AND METHOD FOR NETWORK SECURITY INCLUDING DETECTION OF MAN-IN-THE-BROWSER ATTACKS | EMC Corporation |
| EP11751217.8 | | SYSTEM AND METHOD FOR NETWORK SECURITY INCLUDING DETECTION OF ATTACKS THROUGH PARTNER WEBSITES | EMC Corporation |
| EP11753708.4 | | INDEX SEARCHING USING A BLOOM FILTER | EMC Corporation |
| EP11807550.6 | | SYSTEM AND METHOD FOR DATA DEDUPLICATION FOR DISK STORAGE SUBSYSTEMS | EMC Corporation |
| EP11829826.4 | EP2622456 | OPTIMIZED RECOVERY | EMC Corporation |
| EP11853216.7 | | EFFICIENT STORAGE TIERING | EMC Corporation |
| EP12763802.1 | | SYSTEM AND METHOD FOR MAINTAINING CONSISTENT POINTS IN FILE SYSTEMS USING A PRIME DEPENDENCY LIST | EMC Corporation |
| EP12764154.6 | | TIME-BASED DATA PARTITIONING | EMC Corporation |
| EP12765938.1 | | RESOURCE EFFICIENT SCALE-OUT FILE SYSTEMS | EMC Corporation |
| EP12858776.3 | | EFFICIENT BACKUP REPLICATION | EMC Corporation |
| EP13831514.8 | | LOSSLESS COMPRESSION OF FRAGMENTED IMAGE DATA | EMC Corporation |
| EP13831701.1 | | FORMAT IDENTIFICATION FOR FRAGMENTED BYTE ALIGNED INTEGER IMAGE DATA | EMC Corporation |
| EP14753812.8 | | DATA ANALYTICS PLATFORM OVER PARALLEL DATABASES AND DISTRIBUTED FILE SYSTEMS | EMC Corporation |
| EP14876123.2 | | PARALLEL ON-PREMISES AND CLOUD-BASED AUTHENTICATION | EMC Corporation |
| EP15152142.4 | | METHOD AND SYSTEM FOR SERVICE-AWARE DATA PLACEMENT IN A STORAGE SYSTEM | EMC Corporation |
| EP15159736.6 | | USING SERVER SIDE FONT PREPARATION TO ACHIEVE WYSIWYG AND CROSS PLATFORM FIDELITY ON WEB BASED WORD PROCESSOR | EMC Corporation |
| EP15179359.3 | | SYSTEM AND METHOD FOR SECURE MULTI-TENANCY IN DATADOMAIN OPERATING SYSTEM (DDOS), A PURPOSE BUILT BACKUP APPLIANCE (PBBA) OPERATING SYSTEM | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| EP15187450.0 | | METHODS AND APPARATUS FOR INCREASING DATA STORAGE CAPACITY | EMC Corporation |
| EP1996930609.1 | EP0789877 | SYSTEM FOR MIGRATING DATA BY SELECTING A FIRST OR SECOND TRANSFER MEANS BASED ON THE STATUS OF A DATA ELEMENT MAP | EMC Corporation |
| EP20000311748.8 | EP1113462 | METHOD FOR TRANSMITTING FIBRE-CHANNEL AND NON-FIBRE CHANNEL SIGNALS THROUGH COMMON CABLE | EMC Corporation |
| EP2002702693 | EP1421732 | TRANSACTION SYSTEM | EMC Corporation |
| EP2004793792 | | EFFICIENT MANAGEMENT OF CRYPTOGRAPHIC KEY GENERATIONS | EMC Corporation |
| EP87401108.3 | EP0246168 | COMMUT 16 | EMC Corporation |
| EP90311828.9 | EP0483421 | NETWORK COMMUNICATION SYSTEM | EMC Corporation |
| EP90916922.9 | EP0497889 | METHOD AND APPARATUS FOR SECURE IDENTIFICATION AND VERIFICATION | EMC Corporation |
| EP91309497.5 | EP0482819 | On-Line Reconstruction of a Failed Redundant Array System | EMC Corporation |
| EP91906246.3 | EP0521924 | METHOD AND APPARATUS FOR ASSIGNING SIGNATURES TO IDENTIFY MEMBERS OF A SET OF MASS OF STORAGE DEVICES | EMC Corporation |
| EP91910198.1 | EP0555219 | METHOD AND APPARATUS FOR PERSONAL IDENTIFICATION | EMC Corporation |
| EP93301620.6 | EP0559454 | ON-LINE MODULE REPLACEMENT IN A MULTLIPLE MODULE DATA PROCESSING SYSTEM | EMC Corporation |
| EP93301685.9 | EP0559487 | HIGH AVAILABILITY DISK ARRAYS | EMC Corporation |
| EP93301686.7 | EP0559488 | IMPROVEMENTS FOR HIGH AVAILABILITY DISK ARRAYS | EMC Corporation |
| EP93925165.8 | EP0667998 | METHOD AND APPARATUS FOR AUTHENTICATION OF CLIENT SERVER COMMUNICATION | EMC Corporation |
| EP94901649.7 | EP0720783 | INRUSH CURRENT LIMITER | EMC Corporation |
| EP94914223.6 | EP0695443 | REMOTE DATA MIRRORING | EMC Corporation |
| EP95920589.9 | EP0760939 | APPARATUS AND METHOD FOR EVENT CORRELATION AND PROBLEM REPORTING | EMC Corporation |
| EP95928682.4 | EP0730766 | COMPUTER METHOD AND APPARATUS FOR ASYNCHRONOUS ORDERED OPERATIONS | EMC Corporation |
| EP95944494.4 | EP0745239 | METHOD AND APPARATUS TO SECURE DISTRIBUTED DIGITAL DIRECTORY OBJECT CHANGES | EMC Corporation |
| EP96919202.0 | EP0830651 | RESERVED CYLINDER FOR SCSI DEVICE WRITE BACK CACHE | EMC Corporation |
| EP96919430.7 | EP0827607 | Method for managing globally distributed software components | EMC Corporation |
| EP96923601.7 | EP0836781 | METHOD AND APPARATUS FOR SYNCHRONIZING DATA TRANSMISSION WITH ON-DEMAND LINKS OF A NETWORK | EMC Corporation |
| EP96923633.0 | EP0838055 | System for replicating and associating file types with application programs among plurality of partitions in a server | EMC Corporation |
| EP96925331.9 | EP0842464 | DYNAMIC LOAD BALANCING | EMC Corporation |
| EP96928861.2 | EP0856172 | DATA STORAGE SYSTEM | EMC Corporation |
| EP97907877.1 | EP0883845 | ORTHOGONAL SIGNAL MULTIPLEXING SYSTEM | EMC Corporation |

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|---|---|---|---|
| EP97910701.8 | EP1019820 | DATA VALIDATION SYSTEM FOR A GROUP OF DATA STORAGE DISKS | EMC Corporation |
| EP97910942.8 | EP0938705 | FAIL-OVER SWITCHING SYSTEM | EMC Corporation |
| EP97927901.5 | EP0902923 | METHOD FOR INDEPENDENT AND SIMULTANEOUS ACCESS TO A COMMON DATA SET | EMC Corporation |
| EP97942453.8 | EP1010072 | FILE TRANSFER UTILITY WHICH EMPLOYS AN INTERMEDIATE DATA STORAGE SYSTEM | EMC Corporation |
| EP97944532.7 | EP0950220 | DYNAMICALLY UPGRADEABLE DISK ARRAY SYSTEM AND METHOD | EMC Corporation |
| EP98307410.5 | EP0932096 | APPARATUS AND METHOD OF ACCESSING TARGET DEVICES ACROSS A BUS UTILIZING INITIATOR IDENTIFIERS | EMC Corporation |
| EP98923431.5 | EP983548 | APPARATUS AND METHOD FOR BACKUP OF A DISK STORAGE SYSTEM | EMC Corporation |
| EP98952004.4 | EP1019841 | REDUNDANT, DISTRIBUTED NETWORK SYSTEMS | EMC Corporation |
| EP99900240.5 | EP1049988 | CONTENT ADDRESSABLE INFORMATION ENCAPSULATION, REPRESENTATION, AND TRANSFER | EMC Corporation |
| EP99900245.4 | EP1049989 | ACCESS TO CONTENT ADDRESSABLE DATA OVER A NETWORK | EMC Corporation |
| EP99941177.0 | EP1025483 | METHOD FOR EXCHANGING VOLUMES IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| EP99966711.6 | EP1058888 | DATA STORAGE SYSTEM | EMC Corporation |
| EP99967756.0 | EP1145125 | ONLINE DEBUGGING AND TRACING SYSTEM AND METHOD | EMC Corporation |
| EP99967760.2 | EP1058889 | DATA STORAGE SYSTEM | EMC Corporation |
| EP99973704.2 | EP1071993 | METHOD AND APPARATUS FOR CASCADING DATA THROUGH REDUNDANT DATA STORAGE UNITS | EMC Corporation |
| ES(EP)90916922.9 | ES(EP)0497889 | METHOD AND APPARATUS FOR SECURE IDENTIFICATION AND VERIFICATION | EMC Corporation |
| FR(EDV1)01203306.4 | FR(EDV1)1160654 | SYSTEM AND METHOD FOR ON-LINE, REAL-TIME, DATA MIGRATION | EMC Corporation |
| FR(EDV1)84201482.1 | FR(EDV1)0150522 | HIERACHIAL MEMORY RING PROTECTION SYSTEM USING COMPARISIONS OF REQUESTED AND PREV.... | EMC Corporation |
| FR(EP)00307999.3 | FR(EP)1093051 | METHOD FOR THE TRANSPARENT EXCHANGE OF LOGICAL VOLUMES IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| FR(EP)00959718.8 | FR(EP)1250649 | CRASH RECOVERY WITHOUT COMPLETE REMIRROR | EMC Corporation |
| FR(EP)01991440.7 | FR(EP)1344133 | METHOD OF "SPLIT BRAIN" PREVENTION IN COMPUTER CLUSTER SYSTEMS | EMC Corporation |
| FR(EP)02795496.5 | FR(EP)1430400 | EFFICIENT SEARCH FOR MIGRATION AND PURGE CANDIDATES | EMC Corporation |
| FR(EP)03019062.3 | FR(EP)1416685 | ENRICHED TREE FOR A CONTENT DISTRIBUTION NETWORK | EMC Corporation |
| FR(EP)03783599.8 | FR(EP)1563411 | SYSTEMS AND METHODS FOR RESTRIPING FILES IN A DISTRIBUTED FILE SYSTEM | EMC Corporation |
| FR(EP)04002583.5 | FR(EP)1426863 | METHOD AND APPARATUS FOR MAINTAINING CONSISTENCY OF DATA STORED IN A GROUP OF MIRRORING DEVICES | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| FR(EP)04010899.5 | FR(EP)1499074 | DYNAMIC ROUTING THROUGH A CONTENT DISTRIBUTION NETWORK | EMC Corporation |
| FR(EP)04104115.3 | FR(EP)1521419 | TECHNIQUES FOR SECURING ELECTRONIC IDENTITIES | EMC Corporation |
| FR(EP)04106294.4 | FR(EP)1555780 | METHODS AND SYSTEMS FOR MANAGING NETWORK TRAFFIC BY MULTIPLE CONSTRAINTS | EMC Corporation |
| FR(EP)04810425.1 | FR(EP)1680730 | METHOD FOR PROVIDING A FLAT VIEW OF A HIERARCHICAL NAMESPACE WITHOUT REQUIRING UNIQUE LEAF NAMES | EMC Corporation |
| FR(EP)04813604.8 | FR(EP)1704668 | SYSTEM AND METHOD FOR PROVIDING IMPROVED CLAIMANT AUTHENTICATION | EMC Corporation |
| FR(EP)05004139.1 | FR(EP)1569085 | METHODS AND APPARATUS FOR INCREASING DATA STORAGE CAPACITY | EMC Corporation |
| FR(EP)05101066.8 | FR(EP)1585285 | ISOLATING MULTIPLE AUTHENTICATION CHANNELS, EACH USING MULTIPLE AUTHENTICATION MODELS | EMC Corporation |
| FR(EP)05109790.5 | FR(EP)1650926 | AUTOMATICALLY GRANTING ROOT ACCESS TO ADMINISTRATORS, WITHOUT REQUIRING THE ROOT PASSWORD | EMC Corporation |
| FR(EP)05712935.5 | FR(EP)1719283 | METHOD AND APPARATUS OF AUTHENTICATION OF USERS AND COMMUNICATIONS RECEIVED FROM COMPUTER SYSTEMS | EMC Corporation |
| FR(EP)05854600.3 | FR(EP)1828920 | CONSUMER INTERNET AUTHENTICATION SERVICE | EMC Corporation |
| FR(EP)06115645.1 | FR(EP)1748598 | SYSTEM AND METHOD FOR ENSURING A DEVICE USES THE CORRECT INSTANCE OF A NETWORK SERVICE | EMC Corporation |
| FR(EP)06123514.9 | FR(EP)1811417 | TECHNIQUES FOR PRESERVING AND MANAGING IDENTITIES IN AN AUDIT LOG | EMC Corporation |
| FR(EP)06735936.4 | FR(EP)1854012 | CHECKPOINT AND CONSISTENCY MARKERS | EMC Corporation |
| FR(EP)06801147.7 | FR(EP)1915708 | DATA OBJECT SEARCH AND RETRIEVAL | EMC Corporation |
| FR(EP)07103070.4 | FR(EP)1838069 | REGISTRATION OF PEER-TO-PEER SERVICES | EMC Corporation |
| FR(EP)07117897.4 | FR(EP)1918845 | MULTIPLE SECURITY ACCESS MECHANISMS FOR A SINGLE IDENTIFIER | EMC Corporation |
| FR(EP)07120346.7 | FR(EP)1926259 | CONTROL OF COMMUNICATION PORTS OF COMPUTING DEVICES USING POLICY-BASED DECISIONS | EMC Corporation |
| FR(EP)07755303.0 | FR(EP)2013740 | EFFICIENT DATA STORAGE USING RESEMBLANCE OF DATA SEGMENTS | EMC Corporation |
| FR(EP)07757004.2 | | SYSTEMS AND METHODS FOR OBTAINING ULTRA-HIGH DATA AVAILABILITY AND GEOGRAPHIC DISASTER TOLERANCE | EMC Corporation |
| FR(EP)08102532.2 | FR(DE)1988486 | VIRTUALIZED FEDERATED ROLE PROVISIONING | EMC Corporation |
| FR(EP)08163057.6 | FR(EP)2012460 | KEY DISTRIBUTION | EMC Corporation |
| FR(EP)08164542.6 | FR(EP)2045997 | IDENTITY-BASED ADDRESS NORMALIZATION | EMC Corporation |
| FR(EP)10161223. | FR(EP)22520 | SYSLOG MESSAGE ROUTING SYSTEMS AND | EMC Corporation |

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|---|---|---|---|
| 2 | 38 | METHODS | |
| FR(EP)11829826.4 | FR(EP)2622456 | OPTIMIZED RECOVERY | EMC Corporation |
| FR(EP)1996930609.1 | FR(EP)0789877 | SYSTEM FOR MIGRATING DATA BY SELECTING A FIRST OR SECOND TRANSFER MEANS BASED ON THE STATUS OF A DATA ELEMENT MAP | EMC Corporation |
| FR(EP)87401108.3 | FR(EP)0246168 | COMMUT 16 | EMC Corporation |
| FR(EP)90916922.9 | FR(EP)0497889 | METHOD AND APPARATUS FOR SECURE IDENTIFICATION AND VERIFICATION | EMC Corporation |
| FR(EP)91309497.5 | FR(EP)0482819 | On-Line Reconstruction of a Failed Redundant Array System | EMC Corporation |
| FR(EP)91910198.1 | FR(EP)0555219 | METHOD AND APPARATUS FOR PERSONAL IDENTIFICATION | EMC Corporation |
| FR(EP)93925165.8 | FR(EP)0667998 | METHOD AND APPARATUS FOR AUTHENTICATION OF CLIENT SERVER COMMUNICATION | EMC Corporation |
| FR(EP)95928682.4 | FR(EP)0730766 | COMPUTER METHOD AND APPARATUS FOR ASYNCHRONOUS ORDERED OPERATIONS | EMC Corporation |
| FR(EP)95944494.4 | FR(EP)0745239 | METHOD AND APPARATUS TO SECURE DISTRIBUTED DIGITAL DIRECTORY OBJECT CHANGES | EMC Corporation |
| FR(EP)96919202.0 | FR(EP)0830651 | RESERVED CYLINDER FOR SCSI DEVICE WRITE BACK CACHE | EMC Corporation |
| FR(EP)96919430.7 | FR(EP)0827607 | Method for managing globally distributed software components | EMC Corporation |
| FR(EP)96923601.7 | FR(EP)0836781 | METHOD AND APPARATUS FOR SYNCHRONIZING DATA TRANSMISSION WITH ON-DEMAND LINKS OF A NETWORK | EMC Corporation |
| FR(EP)96923633.0 | FR(EP)0838055 | System for replicating and associating file types with application programs among plurality of partitions in a server | EMC Corporation |
| FR(EP)98307410.5 | FR(EP)0932096 | APPARATUS AND METHOD OF ACCESSING TARGET DEVICES ACROSS A BUS UTILIZING INITIATOR IDENTIFIERS | EMC Corporation |
| FR(EP)98952004.4 | FR(EP)1019841 | REDUNDANT, DISTRIBUTED NETWORK SYSTEMS | EMC Corporation |
| FR(EP05106967.2 | FR(EP16246 44 | PRIVILEGED NETWORK ROUTING | EMC Corporation |
| FR91906246.3 | FR0521924 | METHOD AND APPARATUS FOR ASSIGNING SIGNATURES TO IDENTIFY MEMBERS OF A SET OF MASS OF STORAGE DEVICES | EMC Corporation |
| GB(DV)8903669.3 | GB(DV)2213025 | DISTRIBUTED SWITCHING ARCHITECTURE | EMC Corporation |
| GB(DV1)0411918.6 | GB(DV1)2400268 | INTEGRATED PROCEDURE FOR PARTITIONING NETWORK DATA SERVICES AMONG MULTIPLE SUBSCRIBERS | EMC Corporation |
| GB(DV1)0421666.9 | GB(DV1)2403117 | METHOD AND APPARATUS FOR PRESENTING INFORMATION TO A USER OF A COMPUTER SYSTEM | EMC Corporation |
| GB(DV1)0504583.6 | GB(DV1)2409743 | MULTIPATH MULTIHOP REMOTE DATA FACILITY | EMC Corporation |
| GB(DV1)070266 | GB(DV1)243 | TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |

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|---|---|---|---|
| 9.3 | 4894 | | |
| GB(DV1)070762 5.0 | GB(DV1)243 6746 | VIRTUAL ORDERED WRITES FOR MULTIPLE STORAGE DEVICES | EMC Corporation |
| GB(DV2)070266 8.5 | GB(DV2)243 4893 | TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |
| GB(EDV)071046 09.8 | EP1796001 | METHODS AND SYSTEMS FOR IMPLEMENTING SHARED DISK ARRAY MANAGEMENT FUNCTIONS | EMC Corporation |
| GB(EDV1)01203 306.4 | GB(EDV1)11 60654 | SYSTEM AND METHOD FOR ON-LINE, REAL-TIME, DATA MIGRATION | EMC Corporation |
| GB(EDV1)06113 558.8 | GB(EP)1684 178 | REVERSING A COMMUNICATION PATH BETWEEN STORAGE DEVICES | EMC Corporation |
| GB(EDV1)84201 484.7 | GB(EDV1)01 49858 | DATA PROCESSING SYSTEM HAVING A UNIQUE ADDRESS TRANSLATION UNIT | EMC Corporation |
| GB(EP)00307999 .3 | GB(EP)1093 051 | METHOD FOR THE TRANSPARENT EXCHANGE OF LOGICAL VOLUMES IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| GB(EP)00311601 .9 | GB(EP)1111 509 | APPARATUS FOR ENABLING INDEPENDENT ACCESS TO REPLICATED DATA | EMC Corporation |
| GB(EP)00311737 .1 | GB(EP)1113 363 | FIBRE CHANNEL DATA STORAGE SYSTEM FAIL-OVER MECHANISM | EMC Corporation |
| GB(EP)00911736 .7 | GB(EP)1171 820 | METHODS AND SYSTEMS FOR IMPLEMENTING SHARED DISK ARRAY MANAGEMENT FUNCTIONS | EMC Corporation |
| GB(EP)00948778 .6 | GB(EP)1201 070 | SYSTEM AND METHODS FOR MAINTAINING AND DISTRIBUTING PERSONAL SECURITY DEVICES | EMC Corporation |
| GB(EP)00959718 .8 | GB(EP)1250 649 | CRASH RECOVERY WITHOUT COMPLETE REMIRROR | EMC Corporation |
| GB(EP)00959781 .6 | GB(EP)1125 201 | METHOD AND APPARATUS FOR MAINTAINING CONSISTENCY OF DATA STORED IN A GROUP OF MIRRORING DEVICES | EMC Corporation |
| GB(EP)00978803 .5 | GB(EP)1244 966 | METHOD AND APPARATUS FOR MANAGING INFORMATION RELATED TO STORAGE ACTIVITIES OF DATA STORAGE SYSTEMS | EMC Corporation |
| GB(EP)01102501 .2 | | CONTROLLING ACCESS TO A STORAGE DEVICE | EMC Corporation |
| GB(EP)01991440 .7 | GB(EP)1344 133 | METHOD OF "SPLIT BRAIN" PREVENTION IN COMPUTER CLUSTER SYSTEMS | EMC Corporation |
| GB(EP)02024809 .2 | GB(EP)1313 018 | HIERARCHICAL APPROACH TO IDENTIFYING CHANGING DEVICE CHARACTERISTICS | EMC Corporation |
| GB(EP)02702693 .9 | GB(EP)1421 732 | TRANSACTION SYSTEM | EMC Corporation |
| GB(EP)02795496 .5 | GB(EP)1430 400 | EFFICIENT SEARCH FOR MIGRATION AND PURGE CANDIDATES | EMC Corporation |
| GB(EP)03019062 .3 | GB(EP)1416 685 | ENRICHED TREE FOR A CONTENT DISTRIBUTION NETWORK | EMC Corporation |
| GB(EP)03783599 .8 | (GB)EP1563 411 | SYSTEMS AND METHODS FOR RESTRIPING FILES IN A DISTRIBUTED FILE SYSTEM | EMC Corporation |
| GB(EP)04002583 .5 | GB(EP)1426 863 | METHOD AND APPARATUS FOR MAINTAINING CONSISTENCY OF DATA STORED IN A GROUP OF MIRRORING DEVICES | EMC Corporation |
| GB(EP)04010899 .5 | GB(EP)1499 074 | DYNAMIC ROUTING THROUGH A CONTENT DISTRIBUTION NETWORK | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| GB(EP)04025641.4 | GB(EP)1507207 | HIERARCHICAL APPROACH TO IDENTIFYING CHANGING DEVICE CHARACTERISTICS | EMC Corporation |
| GB(EP)04104115.3 | GB(EP)1521419 | TECHNIQUES FOR SECURING ELECTRONIC IDENTITIES | EMC Corporation |
| GB(EP)04106294.4 | GB(EP)1555780 | METHODS AND SYSTEMS FOR MANAGING NETWORK TRAFFIC BY MULTIPLE CONSTRAINTS | EMC Corporation |
| GB(EP)04715092.5 | GB(EP)1609071 | DATA STORAGE SYSTEM | EMC Corporation |
| GB(EP)04760929.2 | GB(EP)1625690 | METHOD AND APPARATUS FOR AUTHENTICATION OF USERS AND WEB SITES | EMC Corporation |
| GB(EP)04801039.1 | GB(EP)1695221 | DATA STORAGE SYSTEM | EMC Corporation |
| GB(EP)04810425.1 | GB(EP)1680730 | METHOD FOR PROVIDING A FLAT VIEW OF A HIERARCHICAL NAMESPACE WITHOUT REQUIRING UNIQUE LEAF NAMES | EMC Corporation |
| GB(EP)04813604.8 | GB(EP)1704668 | SYSTEM AND METHOD FOR PROVIDING IMPROVED CLAIMANT AUTHENTICATION | EMC Corporation |
| GB(EP)05004139.1 | GB(EP)1569085 | METHODS AND APPARATUS FOR INCREASING DATA STORAGE CAPACITY | EMC Corporation |
| GB(EP)05101066.8 | GB(EP)1585285 | ISOLATING MULTIPLE AUTHENTICATION CHANNELS, EACH USING MULTIPLE AUTHENTICATION MODELS | EMC Corporation |
| GB(EP)05106967.2 | GB(EP)1624644 | PRIVILEGED NETWORK ROUTING | EMC Corporation |
| GB(EP)05109790.5 | GB(EP)1650926 | AUTOMATICALLY GRANTING ROOT ACCESS TO ADMINISTRATORS, WITHOUT REQUIRING THE ROOT PASSWORD | EMC Corporation |
| GB(EP)05712935.5 | GB(EP)1719283 | METHOD AND APPARATUS OF AUTHENTICATION OF USERS AND COMMUNICATIONS RECEIVED FROM COMPUTER SYSTEMS | EMC Corporation |
| GB(EP)05854600.3 | GB(EP)1828920 | CONSUMER INTERNET AUTHENTICATION SERVICE | EMC Corporation |
| GB(EP)06115645.1 | GB(EP)1748598 | SYSTEM AND METHOD FOR ENSURING A DEVICE USES THE CORRECT INSTANCE OF A NETWORK SERVICE | EMC Corporation |
| GB(EP)06123514.9 | GB(EP)1811417 | TECHNIQUES FOR PRESERVING AND MANAGING IDENTITIES IN AN AUDIT LOG | EMC Corporation |
| GB(EP)06718171.9 | GB(EP)1836621 | METHODS AND APPARATUS FOR MANAGING DELETION OF DATA | EMC Corporation |
| GB(EP)06718172.7 | GB(EP)1836622 | METHODS AND APPARATUS FOR MANAGING DELETION OF DATA | EMC Corporation |
| GB(EP)06735936.4 | GB(EP)1854012 | CHECKPOINT AND CONSISTENCY MARKERS | EMC Corporation |
| GB(EP)06750264.1 | GB(EP)1894127 | METHODS AND APPARATUS FOR STORING CONTENT IN A FILE SYSTEM | EMC Corporation |
| GB(EP)06801147.7 | GB(EP)1915708 | DATA OBJECT SEARCH AND RETRIEVAL | EMC Corporation |
| GB(EP)07103070.4 | GB(EP)1838069 | REGISTRATION OF PEER-TO-PEER SERVICES | EMC Corporation |
| GB(EP)07117897.4 | GB(EP)1918845 | MULTIPLE SECURITY ACCESS MECHANISMS FOR A SINGLE IDENTIFIER | EMC Corporation |

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|---|---|---|---|
| GB(EP)07120346.7 | GB(EP)1926259 | CONTROL OF COMMUNICATION PORTS OF COMPUTING DEVICES USING POLICY-BASED DECISIONS | EMC Corporation |
| GB(EP)07755303.0 | GB(EP)2013740 | EFFICIENT DATA STORAGE USING RESEMBLANCE OF DATA SEGMENTS | EMC Corporation |
| GB(EP)07757004.2 | | SYSTEMS AND METHODS FOR OBTAINING ULTRA-HIGH DATA AVAILABILITY AND GEOGRAPHIC DISASTER TOLERANCE | EMC Corporation |
| GB(EP)08102532.2 | GB(EP)1988486 | VIRTUALIZED FEDERATED ROLE PROVISIONING | EMC Corporation |
| GB(EP)08163057.6 | GB(EP)2012460 | KEY DISTRIBUTION | EMC Corporation |
| GB(EP)08164542.6 | GB(EP)2045997 | IDENTITY-BASED ADDRESS NORMALIZATION | EMC Corporation |
| GB(EP)10161223.2 | GB(EP)2252038 | SYSLOG MESSAGE ROUTING SYSTEMS AND METHODS | EMC Corporation |
| GB(EP)11829826.4 | GB(EP)2622456 | OPTIMIZED RECOVERY | EMC Corporation |
| GB(EP)1996930609.1 | GB(EP)0789877 | SYSTEM FOR MIGRATING DATA BY SELECTING A FIRST OR SECOND TRANSFER MEANS BASED ON THE STATUS OF A DATA ELEMENT MAP | EMC Corporation |
| GB(EP)2002024813 | GB(EP)1313017 | REVERSING A COMMUNICATION PATH BETWEEN STORAGE DEVICES | EMC Corporation |
| GB(EP)8307410.5 | GB(EP)0932096 | APPARATUS AND METHOD OF ACCESSING TARGET DEVICES ACROSS A BUS UTILIZING INITIATOR IDENTIFIERS | EMC Corporation |
| GB(EP)90916922.9 | GB(EP)0497889 | METHOD AND APPARATUS FOR SECURE IDENTIFICATION AND VERIFICATION | EMC Corporation |
| GB(EP)91309497.5 | GB(EP)0482819 | On-Line Reconstruction of a Failed Redundant Array System | EMC Corporation |
| GB(EP)91910198.1 | GB(EP)0555219 | METHOD AND APPARATUS FOR PERSONAL IDENTIFICATION | EMC Corporation |
| GB(EP)93925165.8 | GB(EP)0667998 | METHOD AND APPARATUS FOR AUTHENTICATION OF CLIENT SERVER COMMUNICATION | EMC Corporation |
| GB(EP)94914223.6 | GB(EP)0695443 | REMOTE DATA MIRRORING | EMC Corporation |
| GB(EP)95928682.4 | GB(EP)0730766 | COMPUTER METHOD AND APPARATUS FOR ASYNCHRONOUS ORDERED OPERATIONS | EMC Corporation |
| GB(EP)95944494.4 | GB(EP)0745239 | METHOD AND APPARATUS TO SECURE DISTRIBUTED DIGITAL DIRECTORY OBJECT CHANGES | EMC Corporation |
| GB(EP)96919202.0 | GB(EP)0830651 | RESERVED CYLINDER FOR SCSI DEVICE WRITE BACK CACHE | EMC Corporation |
| GB(EP)96919430.7 | GB(EP)0827607 | Method for managing globally distributed software components | EMC Corporation |
| GB(EP)96923601.7 | GB(EP)0836781 | METHOD AND APPARATUS FOR SYNCHRONIZING DATA TRANSMISSION WITH ON-DEMAND LINKS OF A NETWORK | EMC Corporation |
| GB(EP)96923633.0 | GB(EP)0838055 | System for replicating and associating file types with application programs among plurality of partitions in a server | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| GB(EP)97927901.5 | GB(EP)0902923 | METHOD FOR INDEPENDENT AND SIMULTANEOUS ACCESS TO A COMMON DATA SET | EMC Corporation |
| GB(EP)97942453.8 | GB(EP)1010072 | FILE TRANSFER UTILITY WHICH EMPLOYS AN INTERMEDIATE DATA STORAGE SYSTEM | EMC Corporation |
| GB(EP)98952004.4 | GB(EP)1019841 | REDUNDANT, DISTRIBUTED NETWORK SYSTEMS | EMC Corporation |
| GB(EP)99900245.4 | GB(EP)1049989 | ACCESS TO CONTENT ADDRESSABLE DATA OVER A NETWORK | EMC Corporation |
| GB(EP)99941177.0 | GB(EP)1025483 | METHOD FOR EXCHANGING VOLUMES IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| GB(EP)99966711.6 | GB(EP)1058888 | DATA STORAGE SYSTEM | EMC Corporation |
| GB(EP)99967756.0 | GB(EP)1145125 | ONLINE DEBUGGING AND TRACING SYSTEM AND METHOD | EMC Corporation |
| GB(EP)99973704.2 | GB(EP)1071993 | METHOD AND APPARATUS FOR CASCADING DATA THROUGH REDUNDANT DATA STORAGE UNITS | EMC Corporation |
| GB0012368.7 | GB2346995 | METHOD FOR IMPROVING PERFORMANCE OF LARGE DATABASES | EMC Corporation |
| GB0023575.4 | GB2360377 | DATA STORAGE SYSTEM | EMC Corporation |
| GB0024421.0 | GB2353122 | METHOD AND APPARATUS FOR ASYNCHRONOUSLY UPDATING A MIRROR OF A SOURCE DEVICE | EMC Corporation |
| GB0100445.6 | GB2363492 | METHOD AND APPARATUS FOR PROVIDING DATA MANAGEMENT FOR A STORAGE SYSTEM COUPLED TO A NETWORK | EMC Corporation |
| GB0100446.4 | GB2354617 | METHOD & APPARATUS FOR AUTHENTICATING CONNECTIONS TO A STORAGE SYSTEM COUPLED TO A NETWORK | EMC Corporation |
| GB0108066.2 | GB2366424 | DATA STORAGE SYSTEM | EMC Corporation |
| GB0108069.6 | GB2366425 | DATA STORAGE SYSTEM | EMC Corporation |
| GB0108075.3 | GB2366049 | DATA STORAGE SYSTEM | EMC Corporation |
| GB0109796.3 | GB2359159 | METHOD AND APPARATUS FOR IDENTIFYING CHANGES TO A LOGICAL OBJECT BASED ON CHANGES TO THE LOGICAL OBJECT AT A PHYSICAL LEVEL | EMC Corporation |
| GB0114064.9 | GB2359170 | METHOD AND APPARATUS FOR BALANCING WORKLOADS AMONG PATHS IN A MULTI-PATH COMPUTER SYSTEM BASED ON THE STATE OF PREVIOUS I/O OPERATIONS (As Amended) | EMC Corporation |
| GB0127444.8 | GB2364806 | FAULT TOLERANT PARITY GENERATION | EMC Corporation |
| GB0201491.8 | GB2368430 | METHOD AND APPARATUS FOR ENHANCING RECOVERY OPERATIONS IN DISK ARRAY STORAGE DEVICES (Consistent Split and Consistent Snap) | EMC Corporation |
| GB0204624.1 | GB2382179 | SYSTEM AND METHOD FOR SECURE STORAGE, TRANSFER AND RETRIEVAL OF CONTENT ADDRESSABLE INFORMATION | EMC Corporation |
| GB0210551.8 | GB2378022 | DATA STORAGE SYSTEM WITH IMPROVED NETWORK INTERFACE | EMC Corporation |
| GB0214780.9 | GB2374175 | METHODS AND APPARATUS FOR ACCESSING SHARED DATA | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| GB0219742.4 | GB282185 | METHODS AND APPARATUS FOR REPRESENTING RESOURCES IN A COMPUTING SYSTEM ENVIRONMENT | EMC Corporation |
| GB0222838.5 | GB2377354 | METHODS AND APPARATUS FOR PRESENTING INFORMATION TO A USER OF A COMPUTER SYSTEM | EMC Corporation |
| GB0228432.1 | GB2379776 | MULTIPATH MULTIHOP REMOTE DATA FACILITY | EMC Corporation |
| GB0306151 | GB2383677 | METHOD AND APPARATUS FOR RECONFIGURING STRIPED LOGICAL DEVICES IN A DISK ARRAY STORAGE | EMC Corporation |
| GB0306155.3 | GB2383658 | ADAPTIVE PRE-FETCHING OF DATA FROM A DISK | EMC Corporation |
| GB0306158.7 | GB2384083 | SELECTION OF A RESOURCE IN A DISTRIBUTED COMPUTER SYSTEM | EMC Corporation |
| GB0306159.5 | GB2387463 | REMOTE MIRRORING IN A SWITCHED ENVIRONMENT | EMC Corporation |
| GB0312217.3 | GB2385446 | METHOD AND APARATUS FOR PREVENTING UNAUTHORIZED ACCESS BY A NETWORK DEVICE | EMC Corporation |
| GB0312298.3 | GB2386291 | INTEGRATED PROCEDURE FOR PARTITIONING NETWORK DATA SERVICES AMONG MULTIPLE SUBSCRIBERS | EMC Corporation |
| GB0316189.0 | GB2391745 | NETWORK ADAPTER AND METHOD OF USING SAME | EMC Corporation |
| GB0327608.6 | GB2393295 | INFORMATION REPLICATION SYSTEM HAVING ENHANCED ERROR DETECTION AND RECOVERY | EMC Corporation |
| GB0410972.4 | GB2398203 | DYNAMIC RDF GROUPS | EMC Corporation |
| GB0515989.2 | GB2416888 | METHODS AND APPARATUS FOR ACCESSING CONTENT IN A VIRTUAL POOL ON A CONTENT ADDRESSABLE STORAGE SYSTEM | EMC Corporation |
| GB0517063.4 | GB2413670 | VIRTUAL ORDERED WRITES | EMC Corporation |
| GB0519952.6 | GB2418754 | TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |
| GB0609391.8 | GB2423173 | VIRTUAL ORDERED WRITES FOR MULTIPLE STORAGE DEVICES | EMC Corporation |
| GB91906246.3 | GB0521924 | METHOD AND APPARATUS FOR ASSIGNING SIGNATURES TO IDENTIFY MEMBERS OF A SET OF MASS OF STORAGE DEVICES | EMC Corporation |
| GB99900240.5 | GB1049988 | CONTENT ADDRESSABLE INFORMATION ENCAPSULATION, REPRESENTATION, AND TRANSFER | EMC Corporation |
| HK(EP)01100515.5 | HK(EP)1031262 | RELIABLE ARRAY OF DISTRIBUTED COMPUTING NODES | EMC Corporation |
| HK(EP)99100509.6 | HK(EP)1015487 | DATA STORAGE SYSTEM | EMC Corporation |
| IE(EP)03019062.3 | IE(EP)1416685 | ENRICHED TREE FOR A CONTENT DISTRIBUTION NETWORK | EMC Corporation |
| IE(EP)04010899.5 | IE(EP)1499074 | DYNAMIC ROUTING THROUGH A CONTENT DISTRIBUTION NETWORK | EMC Corporation |
| IE(EP)04104115.3 | IE(EP)1521419 | TECHNIQUES FOR SECURING ELECTRONIC IDENTITIES | EMC Corporation |
| IE(EP)04106294.4 | IE(EP)1555780 | METHODS AND SYSTEMS FOR MANAGING NETWORK TRAFFIC BY MULTIPLE CONSTRAINTS | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| IE(EP)05101066.8 | IE(EP)1585285 | ISOLATING MULTIPLE AUTHENTICATION CHANNELS, EACH USING MULTIPLE AUTHENTICATION MODELS | EMC Corporation |
| IE(EP)05106967.2 | IE(EP)1624644 | PRIVILEGED NETWORK ROUTING | EMC Corporation |
| IE(EP)05109790.5 | IE(EP)1650926 | AUTOMATICALLY GRANTING ROOT ACCESS TO ADMINISTRATORS, WITHOUT REQUIRING THE ROOT PASSWORD | EMC Corporation |
| IE(EP)06115645.1 | IE(EP)1748598 | SYSTEM AND METHOD FOR ENSURING A DEVICE USES THE CORRECT INSTANCE OF A NETWORK SERVICE | EMC Corporation |
| IE(EP)08102532.2 | IE(EP)1988486 | VIRTUALIZED FEDERATED ROLE PROVISIONING | EMC Corporation |
| IE(EP)08163057.6 | IE(EP)2012460 | KEY DISTRIBUTION | EMC Corporation |
| IE(EP)93925165.8 | IE(EP)0667998 | METHOD AND APPARATUS FOR AUTHENTICATION OF CLIENT SERVER COMMUNICATION | EMC Corporation |
| IE(EP)96919430.7 | IE(EP)0827607 | Method for managing globally distributed software components | EMC Corporation |
| IE(EP)96923601.7 | IE(EP)0836781 | METHOD AND APPARATUS FOR SYNCHRONIZING DATA TRANSMISSION WITH ON-DEMAND LINKS OF A NETWORK | EMC Corporation |
| IE(EP)96923633.0 | IE(EP)0838055 | System for replicating and associating file types with application programs among plurality of partitions in a server | EMC Corporation |
| IE(EP)96937753.0 | IE(EP)0857390 | STAGGERED STREAM SUPPORT FOR VIDEO ON DEMAND | EMC Corporation |
| IL(DV1)183096 | IL(DIV1)183096 | METHOD AND APPARATUS FOR CASCADING DATA THROUGH REDUNDANT DATA STORAGE UNITS | EMC Corporation |
| IL105895 | IL105895 | SYSTEM AND METHOD FOR DYNAMICALLY CONTROLLING CACHE MANAGEMENT | EMC Corporation |
| IL139069 | IL139069 | METHOD AND APPARATUS FOR CASCADING DATA THROUGH REDUNDANT DATA STORAGE UNITS | EMC Corporation |
| IL174987 | IL174987 | APPARATUS AND METHOD FOR INFORMATION RECOVERY QUALITY ASSESSMENT IN A COMPUTER SYSTEM | EMC Corporation |
| IN00578KOLNP2004 | IN240911 | DYNAMIC RDF GROUPS | EMC Corporation |
| IN01283KOLNP2003 | IN222138 | VIRTUAL STORAGE DEVICES | EMC Corporation |
| IN120KOL2005 | | METHOD OF ACCESSING UNIT OF DATA STORED IN A STORAGE ENVIRONMENT INCLUDING A PLURALITY OF STORAGE CLUSTERS | EMC Corporation |
| IN1260DELNP2010 | | SYSTEM AND METHOD FOR REMOTE ASYNCHRONOUS DATA REPLICATION | EMC Corporation |
| IN1281KOLNP2003 | IN233768 | VIRTUAL STORAGE DEVICES | EMC Corporation |
| IN1335KOLNP2010 | | POLICY BASED FILE MANAGEMENT | EMC Corporation |
| IN1381KOLNP2003 | IN218982 | METHOD FOR SELECTING A RESOURCE FROM A PLURALITY OF RESOURCES (as amended 2 August 2006) | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| IN1492KOLNP2006 | IN255670 | VIRTUAL ORDERED WRITES FOR MULTIPLE STORAGE DEVICES | EMC Corporation |
| IN1554KOLNP2007 | IN268379 | METHODS AND APPARATUS FOR MANAGING THE STORAGE OF CONTENT IN A FILE SYSTEM | EMC Corporation |
| IN1617CHE2015 | | STORAGE SYSTEM UPGRADE | EMC Corporation |
| IN1648KOLNP2005 | IN225420 | METHOD OF ORDERING DATA WRITES | EMC Corporation |
| IN201641010710 | | STORAGE MANAGEMENT SYSTEM AND METHOD | EMC Corporation |
| IN2390/DELNP/2009 | | SYSTEMS AND METHODS OF IMPROVING PERFORMANCE OF TRANSPORT PROTOCOLS IN A MULTI-PATH ENVIRONMENT | EMC Corporation |
| IN2616KOLNP2007 | IN267258 | METHODS AND APPARATUS FOR MANAGING DELETION OF DATA | EMC Corporation |
| IN2619KOLNP2007 | IN263976 | METHOD OF DELETING FIRST CONTENT UNIT FROM STORAGE SYSTEM AND STORAGE SYSTEM THAT STORES FIRST CONTENT UNIT | EMC Corporation |
| IN3121CHENP2011 | | DELTA COMPRESSION AFTER IDENTITY DEDUPLICATION | EMC Corporation |
| IN3418KOLNP2006 | | LOW COST FLEXIBLE NETWORK ACCESSED STORAGE ARCHITECTURE | EMC Corporation |
| IN3755KOLNP2008 | IN268895 | ACCESSING DATA STORAGE DEVICES | EMC Corporation |
| IN3788KOLNP2006 | | METHODS AND APPARATUS FOR MANAGING THE REPLICATION OF CONTENT | EMC Corporation |
| IN3920KOLNP2008 | | METHODS AND APPARATUS FOR TRANSFERRING CONTENT FROM A STORAGE SYSTEM | EMC Corporation |
| IN4442CHE2013 | | CUSTOMER RELATIONSHIP MANAGEMENT (CRM) SYSTEM HAVING A RULES ENGINE FOR PROCESSING SALES PROGRAM RULES | EMC Corporation |
| IN500KOL2005 | IN252579 | TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |
| IN6007CHENP2009 | | AUTOMATED INFORMATION LIFE-CYCLE MANAGEMENT WITH THIN PROVISIONING | EMC Corporation |
| IN6568CHENP2011 | | DATA REDISTRIBUTION IN DATA REPLICATION SYSTEMS | EMC Corporation |
| IN6638CHE2015 | | ACCESSING A VIRTUAL VOLUME ON A STORAGE ARRAY | EMC Corporation |
| IN6639CHE2015 | | PROVIDING STORAGE TECHNOLOGY INFORMATION TO IMPROVE DATABASE PERFORMANCE | EMC Corporation |
| IN6704CHE2014 | | PASSIVE SAN DISCOVERY | EMC Corporation |
| IN6909DEL2009 | | SEEDING REPLICATION | EMC Corporation |
| IN7172DELNP2009 | | CLUSTER STORAGE USING SUBSEGMENTING | EMC Corporation |
| IN749KOL2004 | IN255523 | METHOD AND APPARATUS FOR DATA RETENTION IN A STORAGE SYSTEM | EMC Corporation |
| IN750KOL2004 | IN212609 | METHODS AND APPARATUS FOR GENERATING A CONTENT ADDRESS TO INDICATE DATA UNITS WRITTEN TO A STORAGE SYSTEM PROXIMATE IN TIME | EMC Corporation |
| IN7560/DELNP/2008 | | SYSTEMS AND METHODS OF IMPROVING PERFORMANCE OF TRANSPORT PROTOCOLS | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| IN970CHENP2010 | | SYSTEM AND METHOD FOR PROVIDING WRITE-ONCE-READ-MANY (WORM) STORAGE | EMC Corporation |
| INPCT2001871KOL | IN219545 | METHODS AND SYSTEMS FOR IMPLEMENTING SHARED DISK ARRAY MANAGEMENT FUNCTIONS | EMC Corporation |
| IT(EP)90916922.9 | IT(EP)0497889 | METHOD AND APPARATUS FOR SECURE IDENTIFICATION AND VERIFICATION | EMC Corporation |
| IT(EP)91309497.5 | IT(EP)0482819 | On-Line Reconstruction of a Failed Redundant Array System | EMC Corporation |
| IT91906246.3 | IT0521924 | METHOD AND APPARATUS FOR ASSIGNING SIGNATURES TO IDENTIFY MEMBERS OF A SET OF MASS OF STORAGE DEVICES | EMC Corporation |
| JP H09-533646 | JP3958795 | SYSTEM FOR CURRENTLY UPDATING THE DATABASE BY ONE HOST AND READING THE DATABASE BY DIFFERENT HOST FOR THE PURPOSE OF IMPLEMENTING DECISION SUPPORT FUNCTIONS | EMC Corporation |
| JP(DV)2007-193889 | JP4512620 | METHODS AND APPARATUS FOR REPRESENTING RESOURCES IN A COMPUTING SYSTEM ENVIRONMENT | EMC Corporation |
| JP(DV1)2005092587 | JP4405935 | METHOD AND APPARATUS FOR BALANCING WORKLOADS AMONG PATHS IN A MULTI-PATH COMPUTER SYSTEM | EMC Corporation |
| JP(DV1)2006-052397 | JP4322260 | HIERARCHICAL METHOD AND DEVICE FOR IDENTIFYING CHANGE IN DEVICE CHARACTERISTIC | EMC Corporation |
| JP(DV1)2007-056645 | JP(DV1)4543051 | REMOTE DATA FACILITY OVER AN IP NETWORK | EMC Corporation |
| JP(DV1)2009-000128 | JP5198294 | METHODS AND APPARATUS FOR GENERATING A CONTENT ADDRESS TO INDICATE DATA UNITS WRITTEN TO A STORAGE SYSTEM PROXIMATE IN TIME | EMC Corporation |
| JP09-543030 | | METHOD AND APPARATUS FOR INDEPENDENT AND SIMULTANEOUS ACCESS TO A COMMON DATA SET | EMC Corporation |
| JP16346696 | JP3953549 | MULTIPROCESSOR CLUSTER MEMBERSHIP MANAGER FRAMEWORK | EMC Corporation |
| JP16351596 | JP3836187 | OPERATING SYSTEM FOR A NON-UNIFORM MEMORY ACCESS MULTIPROCESSOR SYSTEM | EMC Corporation |
| JP2000-130681 | JP3796391 | EXTENT-BASED FILE SYSTEMS WITH VERSATILE INDIRECTION OR MULTIPLE VOLUMES | EMC Corporation |
| JP2000-236261 | JP3712922 | METHOD FOR MAKING INDEPENDENT DATA COPIES IN A DATA PROCESSING SYSTEM | EMC Corporation |
| JP2000-291217 | JP4727800 | DIGITAL DATA STORAGE SUBSYSTEM INCLUDING DIRECTORY FOR EFFICIENTLY PROVIDING FORMATTING INFORMATION FOR STORED RECORDS | EMC Corporation |
| JP2000-321949 | JP3860407 | LOAD BALANCING ON DISK ARRAY STORAGE DEVICE | EMC Corporation |
| JP2000-330866 | JP3839655 | SEGMENTING CACHE TO PROVIDE VARYING SERVICE LEVELS | EMC Corporation |

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|---|---|---|---|
| JP2000-404617 | JP3741609 | METHOD AND DEVICE FOR PROCESSING DATA TO ACCESS INDEPENDENTLY OF DUPLICATED DATA | EMC Corporation |
| JP2000-513192 | JP4109416 | DYNAMIC MIRROR SERVICE POLICY | EMC Corporation |
| JP2000-557189 | JP3745961 | METHOD & APPARATUS FOR AUTHENTICATING CONNECTIONS TO A STORAGE SYSTEM COUPLED TO A NETWORK | EMC Corporation |
| JP2000-557195 | JP3779154 | METHOD AND APPARATUS FOR PROVIDING DATA MANAGEMENT FOR A STORAGE SYSTEM COUPLED TO A NETWORK | EMC Corporation |
| JP2000-558454 | JP3697395 | METHOD & APPARATUS FOR STORING DIVERSE DATA STRUCTURES | EMC Corporation |
| JP2000-567999 | JP3860714 | METHOD FOR EXCHANGING VOLUMES IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| JP2000-582895 | JP3866038 | METHOD AND APPARATUS FOR IDENTIFYING CHANGES TO A LOGICAL OBJECT BASED ON CHANGES TO THE LOGICAL OBJECT AT A PHYSICAL LEVEL | EMC Corporation |
| JP2000-591519 | JP | DATA STORAGE SYSTEM | EMC Corporation |
| JP2000-600177 | JP3769190 | METHOD AND APPARATUS FOR CASCADING DATA THROUGH REDUNDANT DATA STORAGE UNITS | EMC Corporation |
| JP20010532367 | | SYSTEM AND METHOD FOR SECURE ELECTRONIC TRANSACTIONS | EMC Corporation |
| JP20010560836 | JP4856344 | SYSTEM AND METHOD FOR REPRESENTING AND MAINTAINING REDUNDANT DATA SETS UTILIZING DNA TRANSMISSION ADN TRANSCRIPTION TECHNIQUES | EMC Corporation |
| JP20010560878 | JP4846156 | HASH FILE SYSTEM AND METHOD FOR USE IN A COMMONALITY FACTORING SYSTEM | EMC Corporation |
| JP2001-099638 | JP4309600 | DATA STORAGE SYSTEM HAVING SEPARATE DATA TRANSFER SECTION AND MESSAGE NETWORK WITH PLURAL DIRECTORS ON A COMMON PRINTED CIRCUIT BOARD AND REDUNDANT SWITCHING NETWORKS | EMC Corporation |
| JP2001-099693 | JP4350319 | DATA STORAGE SYSTEM HAVING SEPARATE DATA TRANSFER SECTION AND MESSAGE NETWORK WITH PLURAL DIRECTORS ON A COMMON PRINTED CIRCUIT BOARD | EMC Corporation |
| JP2001-507187 | JP4191927 | METHOD AND APPARATUS FOR IDENTIFYING NETWORK DEVICES ON A STORAGE NETWORK | EMC Corporation |
| JP2001-517262 | JP4430846 | REMOTE MIRRORING SYSTEM, DEVICE, AND METHOD | EMC Corporation |
| JP2001-520635 | JP3732440 | METHOD AND APPARATUS FOR MAINTAINING CONSISTENCY OF DATA STORED IN A GROUP OF MIRRORING DEVICES | EMC Corporation |
| JP2001-535759 | JP5039263 | MULTIPLE STORAGE ARRAY CONTROL | EMC Corporation |
| JP2001-541946 | JP3718471 | CRASH RECOVERY WITHOUT COMPLETE REMIRROR | EMC Corporation |
| JP2001-552230 | JP3968242 | METHODS AND APPARATUS FOR ACCESSING SHARED DATA | EMC Corporation |
| JP2001-576582 | JP4166472 | METHOD AND APPARATUS FOR PRESENTING INFORMATION TO A USER OF A COMPUTER SYSTEM | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| JP2002-283820 | JP4040411 | METHODS AND APPARATUS FOR REPRESENTING RESOURCES IN A COMPUTING SYSTEM ENVIRONMENT | EMC Corporation |
| JP2002-330684 | JP3779257 | METHOD FOR REVERSING A COMMUNICATION PATH BETWEEN STORAGE DEVICES | EMC Corporation |
| JP2002-330916 | | HIERARCHICAL APPROACH TO IDENTIFYING CHANGING DEVICE CHARACTERISTICS | EMC Corporation |
| JP2002-507375 | JP4885406 | DATA STORAGE SYSTEM HAVING POINT-TO-POINT CONFIGURATION | EMC Corporation |
| JP2002-509878 | JP3730620 | METHOD AND APPARATUS FOR ENHANCING RECOVERY OPERATIONS IN DISK ARRAY STORAGE DEVICES (Consistent Split and Consistent Snap) | EMC Corporation |
| JP2002-511077 | JP3749224 | MULTIPATH MULTIHOP REMOTE DATA FACILITY | EMC Corporation |
| JP2002-540319 | JP4263477 | SYSTEM FOR IDENTIFYING COMMON DIGITAL SEQUENCES | EMC Corporation |
| JP2002-541538 | JP3810738 | ADAPTIVE PRE-FETCHING OF DATA FROM A DISK | EMC Corporation |
| JP2002551706 | JP4500490 | METHOD OF IMPROVING THE AVAILABILITY OF COMPUTER CLUSTERING SYSTEMS THROUGH THE USE OF A NETWORK MEDIUM LINK STATE | EMC Corporation |
| JP2002-551742 | JP4142438 | RESTORATION OF DATA BETWEEN PRIMARY AND BACKUP SYSTEMS | EMC Corporation |
| JP2002574508 | JP4348087 | NETWORK FILE SHARING METHOD AND SYSTEM | EMC Corporation |
| JP20030517804 | JP4504677 | SYSTEM AND METHODS FOR PROVIDING METADATA FOR TRACKING OF INFORMATION ON A DISTRIBUTED FILE SYSTEM OF STORAGE DEVICES | EMC Corporation |
| JP2003-509318 | 4744804 | INFORMATION REPLICATION SYSTEM HAVING ENHANCED ERROR DETECTION AND RECOVERY | EMC Corporation |
| JP2003-538922 | JP4264001 | ENFORCING QUALITY OF SERVICE IN A STORAGE NETWORK | EMC Corporation |
| JP2003-550066 | JP4181044 | PRESERVING A SNAPSHOT OF SELECTED DATA OF A MASS STORAGE SYSTEM | EMC Corporation |
| JP2003-580998 | JP4364650 | DATA STORAGE SYSTEM | EMC Corporation |
| JP20040553414 | JP4639084 | CRYPTOGRAPHIC METHODS AND APPARATUS FOR SECURE AUTHENTICATION | EMC Corporation |
| JP20040553816 | JP4464279 | SYSTEMS AND METHODS FOR RESTRIPING FILES IN A DISTRIBUTED FILE SYSTEM | EMC Corporation |
| JP2004-355472 | JP4372671 | METHODS AND APPARATUS FOR GENERATING A CONTENT ADDRESS TO INDICATE DATA UNITS WRITTEN TO A STORAGE SYSTEM PROXIMATE IN TIME | EMC Corporation |
| JP2004549924 | JP4648003 | METHOD AND APPARATUS FOR PROVISIONING STORAGE RESOURCES | EMC Corporation |
| JP2004-563677 | | AUTOMATED MEDIA MANAGEMENT | EMC Corporation |
| JP2004-563678 | | RESOURCE ALLOCATION AWARE QUEUING OF REQUESTS FOR MEDIA RESOURCES | EMC Corporation |
| JP2005189105 | | TRIANGULAR ASYNCHRONOUS REPLICATION | EMC Corporation |
| JP20060525528 | | DATA MESSAGE MIRRORING AND REDIRECTION | EMC Corporation |
| JP2006526341 | JP4778899 | SYSTEM AND METHOD FOR RISK BASED | EMC Corporation |

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|---|---|---|---|
| | | AUTHENTICATION | |
| JP2006526361 | JP5058600 | SYSTEM AND METHOD PROVIDING DISCONNECTED AUTHENTICATION | EMC Corporation |
| JP2006533412 | | SYSTEM AND METHOD FOR TRANSFERING DATA FROM A SOURCE MACHINE TO A TARGET MACHINE | EMC Corporation |
| JP2006535304 | | EFFICIENT MANAGEMENT OF CRYPTOGRAPHIC KEY GENERATIONS | EMC Corporation |
| JP2007-549485 | 4705649 | SYSTEMS AND METHODS FOR DYNAMIC DATA BACKUP | EMC Corporation |
| JP2007-549511 | JP4712816 | SYSTEMS AND METHODS FOR RESTORING DATA | EMC Corporation |
| JP2007-551371 | JP5081631 | METHODS AND APPARATUS FOR MANAGING DELETION OF DATA | EMC Corporation |
| JP2007-556314 | JP4790731 | DERIVATIVE SEEDS | EMC Corporation |
| JP2008-502972 | JP5215840 | ASYNCHRONOUS EVENT NOTIFICATION | EMC Corporation |
| JP2008-519541 | JP4712873 | CREATION OF A SINGLE CLIENT SNAPSHOT USING A CLIENT UTILITY | EMC Corporation |
| JP2008548759 | JP5133260 | CONTINUOUS BACKUP | EMC Corporation |
| JP20090261303 | JP5096441 | SYSTEMS AND METHODS FOR RESTRIPING FILES IN A DISTRIBUTED FILE SYSTEM | EMC Corporation |
| JP2009-501704 | | METHOD AND SYSTEM FOR ARCHIVING DATA | EMC Corporation |
| JP2010-531015 | JP5504165 | ACCESS METHOD, CLIENT, COMPUTER SOFTWARE, AND SYSTEM FOR DATA FILE OBJECT* | EMC Corporation |
| JP2011212673 | | SYSTEM AND METHOD FOR REPRESENTING AND MAINTAINING REDUNDANT DATA SETS UTILIZING DNA TRANSMISSION ADN TRANSCRIPTION TECHNIQUES | EMC Corporation |
| JP2011-547873 | JP5335934 | METHOD AND APPARATUS FOR PROCESSING DISTRIBUTED DATA | EMC Corporation |
| JP2012-014358 | JP5451785 | SYSTEM AND METHOD PROVIDING DISCONNECTED AUTHENTICATION | EMC Corporation |
| JP2012-178384 | JP5512760 | HIGH EFFICIENCY PORTABLE ARCHIVE | EMC Corporation |
| JP2012-503418 | JP5693560 | DATA REDISTRIBUTION IN DATA REPLICATION SYSTEMS | EMC Corporation |
| JP2012-523067 | JP5373199 | DATA PROCESSING SYSTEM USING CACHE-AWARE MULTIPATH DISTRIBUTION OF STORAGE COMMANDS AMONG CACHING STORAGE CONTROLLERS | EMC Corporation |
| JP2012-97071 | | METHODS AND APPARATUS FOR MANAGING DELETION OF DATA | EMC Corporation |
| JP2015191066 | | METHOD AND SYSTEM FOR IMPROVING FLASH STORAGE UTILIZATION USING READ-THRESHOLD TABLES | EMC Corporation |
| JP2015555452 | JP5932171 | METHOD AND SYSTEM FOR OBJECT-BASED TRANSACTIONS IN A STORAGE SYSTEM | EMC Corporation |
| JP28922898 | JP3583931 | APPARATUS AND METHOD OF ACCESSING TARGET DEVICES ACROSS A BUS UTILIZING INITIATOR IDENTIFIERS | EMC Corporation |
| JP33929191 | JP2959901 | On-Line Reconstruction of a Failed Redundant Array System | EMC Corporation |

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|---|---|---|---|
| JP3-506033 | JP2859960 | DATA STORAGE APPARATUS AND METHOD | EMC Corporation |
| JP5033541997 | JP3083853 | METHOD FOR MANAGING GLOBALLY DISTRIBUTED SOFTWARE COMPONENTS | EMC Corporation |
| JP55044398 | JP3792258 | APPARATUS AND METHOD FOR BACKUP OF A DISK STORAGE SYSTEM | EMC Corporation |
| JP9901413 | | Magnetic Recording Unit | EMC Corporation |
| JP9901414 | | Magnetic Recording Unit | EMC Corporation |
| JP9903193 | | Magnetic Recording Device | EMC Corporation |
| JP9905921 | | Card-Type Electronic Device | EMC Corporation |
| JPH10-500593 | JP4583507 | SUPPLEMENTARY COMMUNICATIONS BETWEEN HOST PROCESSOR AND MASS STORAGE CONTROLLER | EMC Corporation |
| KR10-1998-0700967 | KR10-0406479 | DATA STORAGE SYSTEM | EMC Corporation |
| KR10-1998-0703068 | KR449981 | STAGGERED STREAM SUPPORT FOR VIDEO ON DEMAND | EMC Corporation |
| KR10-1998-0707420 | KR10-0674642 | MULTI-HOST DECISION SUPPORT SYSTEM | EMC Corporation |
| KR10-2000-7004529 | KR10-0655358 | METHOD FOR EXCHANGING VOLUMES IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| KR10-2000-7009605 | KR10-0585414 | DATA STORAGE SYSTEM | EMC Corporation |
| KR10-2000-7009616 | KR0560552 | DATA STORAGE SYSTEM | EMC Corporation |
| KR10-2000-7011519 | KR10-0562820 | METHOD AND APPARATUS FOR CASCADING DATA THROUGH REDUNDANT DATA STORAGE UNITS | EMC Corporation |
| KR10-2000-7015105 | KR10-0585368 | METHOD AND APPARATUS FOR PROVIDING DATA MANAGEMENT FOR A STORAGE SYSTEM COUPLED TO A NETWORK | EMC Corporation |
| KR102002701080 4 | KR0860821 | HASH FILE SYSTEM AND METHOD FOR USE IN A COMMONALITY FACTORING SYSTEM | EMC Corporation |
| KR102003700597 7 | KR878861 | SYSTEM FOR IDENTIFYING COMMON DIGITAL SEQUENCES | EMC Corporation |
| KR102003700729 5 | KR608274 | RESTORING MASS STORAGE DEVICE TO A PRIOR STATE IN RESPONSE TO PROCESSING INFORMATION | EMC Corporation |
| KR102003700746 6 | KR10064317 9 | RESTORATION OF DATA BETWEEN PRIMARY AND BACKUP SYSTEMS | EMC Corporation |
| KR10-2003-7008210 | KR0557399 | METHOD OF IMPROVING THE AVAILABILITY OF COMPUTER CLUSTERING SYSTEMS THROUGH THE USE OF A NETWORK MEDIUM LINK STATE | EMC Corporation |
| KR10-2003-7016806 | KR10-0577314 | MIRRORING NETWORK DATA TO ESTABLISH VIRTUAL STORAGE AREA NETWORK | EMC Corporation |
| KR10-2004-7004501 | KR10-962055 | SHARING OBJECTS BETWEEN COMPUTER SYSTEMS | EMC Corporation |
| KR102006700721 7 | 10-0807926 | EFFICIENT MANAGEMENT OF CRYPTOGRAPHIC KEY GENERATIONS | EMC Corporation |
| KR10-2007-7010921 | KR10-1164700 | CONFIGURING, MONITORING AND/OR MANAGING RESOURCE GROUPS INCLUDING A VIRTUAL MACHINE | EMC Corporation |
| KR2000-7003200 | KR10- | DYNAMIC MIRROR SERVICE POLICY | EMC Corporation |

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|---|---|---|---|
| | 0563147 | | |
| KR2004-7008199 | KR0560726 | PRESERVING A SNAPSHOT OF SELECTED DATA OF A MASS STORAGE SYSTEM | EMC Corporation |
| KR2007-7012377 | KR10-1162398 | CHECKPOINT AND CONSISTENCY MARKERS | EMC Corporation |
| KR701742/1995 | KR0207815 | METHOD AND APPARATUS FOR AUTHENTICATION OF CLIENT SERVER COMMUNICATION | EMC Corporation |
| KR98-700461 | KR10-0379222 | DYNAMIC LOAD BALANCING | EMC Corporation |
| NL(EDV1)84201482.1 | NL(EDV1)0150522 | HIERACHIAL MEMORY RING PROTECTION SYSTEM USING COMPARISIONS OF REQUESTED AND PREV…. | EMC Corporation |
| PCT/US1996/010340 | | Method for managing globally distributed software components | EMC Corporation |
| PCT/US1996/011202 | | METHOD AND APPARATUS FOR SYNCHRONIZING DATA TRANSMISSION WITH ON-DEMAND LINKS OF A NETWORK | EMC Corporation |
| PCT/US2007/061798 | | SYSTEMS AND METHODS OF IMPROVING PERFORMANCE OF TRANSPORT PROTOCOLS | EMC Corporation |
| PCT2000003275 | | METHODS AND SYSTEMS FOR IMPLEMENTING SHARED DISK ARRAY MANAGEMENT FUNCTIONS | EMC Corporation |
| PCT2001009440 | | METHOD AND SYSTEM FOR PROVIDING MULTIMEDIA INFORMATION ON DEMAND OVER WIDE AREA NETWORKS | EMC Corporation |
| PCTFR0101324 | | BACKUP AND RESTORE SYSTEM FOR DATA DERIVED FROM A PLURALITY OF HOST EQUIPMENT IN HETEROGENOUS ENVIRONMENT | EMC Corporation |
| PCTFR0102381 | | METHOD FOR SAVING COMPUTER DATA | EMC Corporation |
| PCTFR0102420 | | VIRTUAL STORAGE SYSTEM | EMC Corporation |
| PCTIB0001354 | | SYSTEM AND METHOD FOR SECURE STORAGE, TRANSFER AND RETRIEVAL OF CONTENT ADDRESSABLE INFORMATION | EMC Corporation |
| PCTIB2006004062 | | MAINTAINING WRITE ORDER FIDELITY ON A MULTI-WRITER SYSTEM | EMC Corporation |
| PCTIB2012003081 | | PROVISIONING STORAGE RESOURCES BASED ON AN EXPERT SYSTEM | EMC Corporation |
| PCTIB2012003084 | | POLAR CODES FOR EFFICIENT ENCODING AND DECODING IN REDUNDANT DISK ARRAYS | EMC Corporation |
| PCTIB2013001084 | | CONGESTION AVOIDANCE AND CONTROL FOR UPD BASED PROTOCOLS | EMC Corporation |
| PCTIB2013001089 | | MANAGING PROVISIONING OF STORAGE RESOURCES | EMC Corporation |
| PCTIB2013001091 | | LOSSLESS COLOR IMAGE COMPRESSION ADAPTIVELY USING SPATIAL PREDICTION OR INTER-COMPONENT PREDICTION | EMC Corporation |
| PCTIB2013001188 | | LOAD BALANCING ON DISKS IN RAID BASED ON LINEAR BLOCK CODES | EMC Corporation |
| PCTIB2013001206 | | OFFLOADING RAID UPDATE OPERATIONS TO DISK CONTROLLERS | EMC Corporation |
| PCTIB9900096 | | CONTENT ADDRESSABLE INFORMATION ENCAPSULATION, REPRESENTATION, AND | EMC Corporation |

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|---|---|---|---|
| | | TRANSFER | |
| PCTIB9900101 | | ACCESS TO CONTENT ADDRESSABLE DATA OVER A NETWORK | EMC Corporation |
| PCTIL2002000186 | | TRANSACTION SYSTEM | EMC Corporation |
| PCTIL200300828 | | APPARATUS AND METHOD FOR INFORMATION RECOVERY QUALITY ASSESSMENT IN A COMPUTER SYSTEM | EMC Corporation |
| PCTIL2006000254 | | SYSTEM AND METHOD FOR DETECTING AND MITIGATING DNS SPOOFING TROJANS | EMC Corporation |
| PCTIL2006000376 | | SYSTEM AND METHOD FOR DETECTING A PROXY BETWEEN A CLIENT AND SERVER | EMC Corporation |
| PCTIL2006001125 | | SYSTEM AND METHOD FOR CONDUCTING SECURE TRANSACTIONS | EMC Corporation |
| PCTIL2012050314 | | METHODS AND SYSTEMS OF MANAGING A DISTRIBUTED REPLICA BASED STORAGE | EMC Corporation |
| PCTJP0003837 | | Card-Type Magnetic Recording Device | EMC Corporation |
| PCTJP0003911 | | Card Type Magnetic Recording Device | EMC Corporation |
| PCTJP1996002235 | | Magnetic Disk Cartridge | EMC Corporation |
| PCTRU2010000815 | | DYNAMIC COMPRESSION OF AN I/O BLOCK | EMC Corporation |
| PCTRU2011000196 | | RETRIEVING DATA FROM DATA STORAGE SYSTEMS | EMC Corporation |
| PCTRU2011000953 | | SUPERVISING A DATA STORAGE SYSTEM | EMC Corporation |
| PCTRU2012000520 | | REDUNDANT DISK ENCODING VIA ERASURE DECODING | EMC Corporation |
| PCTRU2012000521 | | DECISION PROCEDURE FOR CUSTOMER ISSUE RESOLUTION | EMC Corporation |
| PCTRU2012000784 | | ENVIRONMENTAL ALERT FOR COMPUTER SYSTEMS | EMC Corporation |
| PCTRU2012001019 | | STORAGE RESOURCE USAGE ANALYSIS FOR CUSTOMIZED APPLICATION OPTIONS | EMC Corporation |
| PCTRU2013000782 | | RESOURCE PROVISIONING BASED ON LOGICAL PROFILES AND OBJECTIVE FUNCTIONS | EMC Corporation |
| PCTRU2013000846 | | DYNAMIC MALICIOUS APPLICATION DETECTION IN STORAGE SYSTEMS | EMC Corporation |
| PCTRU2013000847 | | FLEXIBLE LICENSING ARCHITECTURE | EMC Corporation |
| PCTRU2013000906 | | RESOURCE PROVISIONING BASED ON LOGICAL PROFILES AND PIECEWISE OBJECTIVE FUNCTIONS | EMC Corporation |
| PCTRU2013001151 | | ASYNCHRONOUS NOTIFICATION METHOD FOR DATA STORAGE SYSTEMS | EMC Corporation |
| PCTRU2014000229 | | PROVISIONING RESOURCES FOR DATACENTERS | EMC Corporation |
| PCTRU2014000470 | | TECHNIQUES FOR AUTOMATICALLY FREEING SPACE IN A LOG-STRUCTURED STORAGE SYSTEM | EMC Corporation |
| PCTRU2014000728 | | POLICY BASED PROVISIONING OF STORAGE SYSTEM RESOURCES | EMC Corporation |

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|---|---|---|---|
| PCTRU2014000732 | | COMPLEXITY-ADAPTIVE COMPRESSION OF COLOR IMAGES USING BINARY ARITHMETIC CODING | EMC Corporation |
| PCTRU2014000971 | | METADATA STRUCTURES FOR LOW LATENCY AND HIGH THROUGHOUT INLINE DATA COMPRESSION | EMC Corporation |
| PCTRU2014001015 | | METHOD AND APPARATUS FOR IT APPLIANCE CONTROL | EMC Corporation |
| PCTRU2015 | | AUGMENTED REALITY SYSTEM AND METHOD | EMC Corporation |
| PCTRU2015000162 | | TECHNIQUES FOR SYNCHRONIZATION MANAGEMENT | EMC Corporation |
| PCTRU2015000178 | | SMART LOGGING OF TRACE DATA FOR STORAGE SYSTEMS | EMC Corporation |
| PCTRU2015000190 | | MANAGING CACHE COMPRESSION IN DATA STORAGE SYSTEMS | EMC Corporation |
| PCTRU2015000202 | | NETWORK ADDRESS SHARING IN A MULTITENTANT, MONOLITHIC APPLICATION ENVIRONMENT | EMC Corporation |
| PCTRU2015000408 | | METHOD, APPRATUS AND COMPUTER PROGRAM PRODUCT FOR EVALUATING DATA STORAGE SYSTEMS FOR ENERGY EFFICIENY | EMC Corporation |
| PCTRU2015000409 | | CACHE DATA PLACEMENT FOR COMPRESSION IN DATA STORAGE SYSTEMS | EMC Corporation |
| PCTRU2015000625 | | AUTOMATED LOAD BALANCING FOR STORAGE SYSTEMS BASED ON PREDICTIVE ANALYSIS OF WORKLOAD HISTORY | EMC Corporation |
| PCTRU2015000631 | | SELECTIVE COMPRESSION IN DATA STORAGE SYSTEMS | EMC Corporation |
| PCTRU2015000949 | | EFFICIENT DEDUPLICATION OF LOGICAL UNITS | EMC Corporation |
| PCTRU2016000176 | | BACKUP SERVER SELECTION BASED ON DATA COMMONALITY | EMC Corporation |
| PCTRU2016000181 | | VIRTUAL MACHINE STORAGE MANAGEMENT QUEUE | EMC Corporation |
| PCTRU2016000393 | | TECHNIQUES FOR ACCURATELY APPRISING A USER OF PROGRESS IN BOOTING A VIRTUAL APPLIANCE | EMC Corporation |
| PCTRU2016000406 | | ARRANGING SSD RESOURCES BASED ON ESTIMATED ENDURANCE | EMC Corporation |
| PCTSE2004001466 | | EFFICIENT MANAGEMENT OF CRYPTOGRAPHIC KEY GENERATIONS | EMC Corporation |
| PCTUS0003522 | | A FUZZY COMMITMENT SCHEME LOGIQUE DE VALIDATION FLOUE | EMC Corporation |
| PCTUS0013733 | | FAULT TOLERANT PARITY GENERATION | EMC Corporation |
| PCTUS0017557 | | METHOD AND APPARATUS FOR IDENTIFYING NETWORK DEVICES ON A STORAGE NETWORK | EMC Corporation |
| PCTUS0017779 | | DATA STORAGE SYSTEM | EMC Corporation |
| PCTUS0017799 | | FIBRE CHANNEL BY-PASS | EMC Corporation |
| PCTUS0017942 | | DATA INTEGRITY MANAGEMENT FOR DATA STORAGE SYSTEMS | EMC Corporation |
| PCTUS0019654 | | SYSTEM AND METHOD FOR CERTIFICATE EXCHANGE | EMC Corporation |

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|---|---|---|---|
| PCTUS0019654 | | SYSTEM AND METHOD FOR CERTIFICATE EXCHANGE | EMC Corporation |
| PCTUS0019656 | | SYSTEM AND METHODS FOR MAINTAINING AND DISTRIBUTING PERSONAL SECURITY DEVICES | EMC Corporation |
| PCTUS0019656 | | SYSTEM AND METHODS FOR MAINTAINING AND DISTRIBUTING PERSONAL SECURITY DEVICES | EMC Corporation |
| PCTUS0024007 | | CRASH RECOVERY WITHOUT COMPLETE REMIRROR | EMC Corporation |
| PCTUS0024128 | | METHOD AND APPARATUS FOR MAINTAINING CONSISTENCY OF DATA STORED IN A GROUP OF MIRRORING DEVICES | EMC Corporation |
| PCTUS0024554 | | METHODS AND APPARATUS FOR FLEXIBLY ALLOCATING BANDWITH FOR A POINT-to-PONT, SERIAL, BIDIRECTIONAL COMMUNICAITON PATH | EMC Corporation |
| PCTUS0029807 | | METHOD AND APPARATUS FOR CONVERTING BETWEEN LOGICAL AND PHYSICAL MEMORY SPACE IN A RAID SYSTEM | EMC Corporation |
| PCTUS0041708 | | MULTIPLE STORAGE ARRAY CONTROL | EMC Corporation |
| PCTUS0104760 | | SYSTEM AND METHOD FOR REDUNDANT ARRAY NETWORK STORAGE | EMC Corporation |
| PCTUS0104763 | | HASH FILE SYSTEM AND METHOD FOR USE IN A COMMONALITY FACTORING SYSTEM | EMC Corporation |
| PCTUS0111792 | | METHOD AND APPARATUS FOR PRESENTING INFORMATION TO A USER OF A COMPUTER SYSTEM | EMC Corporation |
| PCTUS0112297 | | STORAGE NETWORK CABLING VERIFICATION SYSTEM | EMC Corporation |
| PCTUS0118809 | | MULTIPATH MULTIHOP REMOTE DATA FACILITY | EMC Corporation |
| PCTUS0121589 | | METHOD AND APPARATUS FOR ENHANCING RECOVERY OPERATIONS IN DISK ARRAY STORAGE DEVICES (Consistent Split and Consistent Snap) | EMC Corporation |
| PCTUS0129145 | | METHOD AND APPARATUS FOR RECONFIGURING STRIPED LOGICAL DEVICES IN A DISK ARRAY STORAGE | EMC Corporation |
| PCTUS0129264 | | SWITCH-BASED ACCELERATION OF COMPUTER DATA STORAGE EMPLOYING AGGREGATIONS OF DISK ARRAYS | EMC Corporation |
| PCTUS0129532 | | SYSTEM AND METHOD FOR HEIRARCHICAL DATA STORAGE | EMC Corporation |
| PCTUS0141175 | | DATA STORAGE SYSTEM HAVING POINT-TO-POINT CONFIGURATION | EMC Corporation |
| PCTUS0146889 | | METHOD AND APARATUS FOR PREVENTING UNAUTHORIZED ACCESS BY A NETWORK DEVICE | EMC Corporation |
| PCTUS0147505 | | NETWORK ADAPTER AND METHOD OF USING SAME | EMC Corporation |
| PCTUS0149600 | | METHOD OF IMPROVING THE AVAILABILITY OF COMPUTER CLUSTERING SYSTEMS THROUGH THE USE OF A NETWORK MEDIUM LINK STATE | EMC Corporation |
| PCTUS02008159 | | NETWORK FILE SHARING METHOD AND SYSTEM | EMC Corporation |

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|---|---|---|---|
| PCTUS0204034 | | SYSTEM AND METHOD OF INDEXING UNIQUE ELECTRONIC MAIL MESSAGES AND USES FOR THE SAME | EMC Corporation |
| PCTUS0212444 | | INTEGRATED PROCEDURE FOR PARTITIONING NETWORK DATA SERVICES AMONG MULTIPLE SUBSCRIBERS | EMC Corporation |
| PCTUS0230635 | | VIRTUALIZATION IN A STORAGE SYSTEM | EMC Corporation |
| PCTUS0230841 | | SHARING OBJECTS BETWEEN COMPUTER SYSTEMS | EMC Corporation |
| PCTUS0230889 | | ENFORCING QUALITY OF SERVICE IN A STORAGE NETWORK | EMC Corporation |
| PCTUS0230914 | | POOLING AND PROVISIONING STORAGE RESOURCES IN A STORAGE NETWORK | EMC Corporation |
| PCTUS0230946 | | EFFICIENT SEARCH FOR MIGRATION AND PURGE CANDIDATES | EMC Corporation |
| PCTUS0230970 | | SERVERLESS STORAGE SERVICES | EMC Corporation |
| PCTUS0230974 | | STORAGE SWITCH FOR STORAGE AREA NETWORK | EMC Corporation |
| PCTUS0231928 | | EFFICIENT MANAGEMENT OF LARGE FILES | EMC Corporation |
| PCTUS0237309 | | PRESERVING A SNAPSHOT OF SELECTED DATA OF A MASS STORAGE SYSTEM | EMC Corporation |
| PCTUS03040223 | | RESOURCE ALLOCATION AWARE QUEUING OF REQUESTS FOR MEDIA RESOURCES | EMC Corporation |
| PCTUS0309112 | | DATA STORAGE SYSTEM | EMC Corporation |
| PCTUS0311158 | | VIRTUAL STORAGE DEVICES | EMC Corporation |
| PCTUS0311272 | | VIRTUAL STORAGE DEVICES | EMC Corporation |
| PCTUS0327442 | | DYNAMIC RDF GROUPS | EMC Corporation |
| PCTUS0337928 | | IDENTITY AUTHENTICATION SYSTEM AND METHOD | EMC Corporation |
| PCTUS0339930 | | AUTOMATED MEDIA LIBRARY CONFIGURATION | EMC Corporation |
| PCTUS0340222 | | AUTOMATED MEDIA MANAGEMENT | EMC Corporation |
| PCTUS05003686 | | METHOD AND APPARATUS OF AUTHENTICATION OF USERS AND COMMUNICATIONS RECEIVED FROM COMPUTER SYSTEMS | EMC Corporation |
| PCTUS05018102 | | SYSTEM AND METHOD OF FRAUD REDUCTION | EMC Corporation |
| PCTUS05035200 | | FILE INDEX PROCESSING | EMC Corporation |
| PCTUS05035212 | | INDEX PROCESSING | EMC Corporation |
| PCTUS05045921 | | CONSUMER INTERNET AUTHENTICATION SERVICE | EMC Corporation |
| PCTUS0905429 | | DELTA COMPRESSION AFTER IDENTITY DEDUPLICATION | EMC Corporation |
| PCTUS1000947 | | DATA REDISTRIBUTION IN DATA REPLICATION SYSTEMS | EMC Corporation |
| PCTUS1348841 | | FORMAT IDENTIFICATION FOR FRAGMENTED BYTE ALIGNED INTEGER IMAGE DATA | EMC Corporation |
| PCTUS1991003034 | | METHOD AND APPARATUS FOR PERSONAL IDENTIFICATION | EMC Corporation |
| PCTUS1991003034 | | METHOD AND APPARATUS FOR PERSONAL IDENTIFICATION | EMC Corporation |
| PCTUS1991005679 | | FAULT TOLERANT COMPUTER SYSTEM | EMC Corporation |

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|---|---|---|---|
| PCTUS199101251 | | Method and Apparatus for Transferring Data through a Staging Memory | EMC Corporation |
| PCTUS199101252 | | DATA STORAGE APPARATUS AND METHOD | EMC Corporation |
| PCTUS199101310 | | METHOD AND APPARATUS FOR SCHEDULING ACCESS TO A CSMA COMMUNICATION MEDIUM | EMC Corporation |
| PCTUS1993010585 | | METHOD AND APPARATUS FOR AUTHENTICATION OF CLIENT SERVER COMMUNICATION | EMC Corporation |
| PCTUS199404326 | | REMOTE DATA MIRRORING | EMC Corporation |
| PCTUS1995009469 | | COMPUTER METHOD AND APPARATUS FOR ASYNCHRONOUS ORDERED OPERATIONS | EMC Corporation |
| PCTUS1995016543 | | METHOD AND APPARATUS TO SECURE DISTRIBUTED DIGITAL DIRECTORY OBJECT CHANGES | EMC Corporation |
| PCTUS199506426 | | APPARATUS AND METHOD FOR EVENT CORRELATION AND PROBLEM REPORTING | EMC Corporation |
| PCTUS1996011263 | | System for replicating and associating file types with application programs among plurality of partitions in a server | EMC Corporation |
| PCTUS199601973 | | INTEGRITY PROTECTION FOR PARITY CALCULATION FOR RAID PARITY CACHE | EMC Corporation |
| PCTUS199605342 | | METHOD AND APPARATUS FOR STORING AND RETRIEVING ERROR CHECK INFORMATION | EMC Corporation |
| PCTUS199607484 | | DISK ARRAY SYSTEM INCLUDING A DUAL-PORTED STAGING MEMORY AND CONCURRENT REDUNDANCY CALCULATION CAPABILITY | EMC Corporation |
| PCTUS199611781 | | DYNAMIC LOAD BALANCING | EMC Corporation |
| PCTUS199704366 | | SYSTEM FOR CURRENTLY UPDATING THE DATABASE BY ONE HOST AND READING THE DATABASE BY DIFFERENT HOST FOR THE PURPOSE OF IMPLEMENTING DECISION SUPPORT FUNCTIONS | EMC Corporation |
| PCTUS199708243 | | SUPPLEMENTARY COMMUNICATIONS BETWEEN HOST PROCESSOR AND MASS STORAGE CONTROLLER | EMC Corporation |
| PCTUS199913522 | | METHOD & APPARATUS FOR AUTHENTICATING CONNECTIONS TO A STORAGE SYSTEM COUPLED TO A NETWORK | EMC Corporation |
| PCTUS199914974 | | Readable indelible mark on storage media | EMC Corporation |
| PCTUS199921690 | | Latent Illuminance Discrimination Marker with Reflective Layer for Data Storage Cartridges | EMC Corporation |
| PCTUS199929499 | | APPARATUS AND METHODS FOR OPERATING A COMPUTER STORAGE SYSTEM | EMC Corporation |
| PCTUS2000021193 | | REMOTE MIRRORING SYSTEM, DEVICE, AND METHOD | EMC Corporation |
| PCTUS2000031735 | | METHOD AND APPARATUS FOR MANAGING INFORMATION RELATED TO STORAGE ACTIVITIES OF DATA STORAGE SYSTEMS | EMC Corporation |

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|---|---|---|---|
| PCTUS2000041480 | | SYSTEM AND METHOD FOR SECURE ELECTRONIC TRANSACTIONS | EMC Corporation |
| PCTUS200100196 | | METHODS AND APPARATUS FOR ACCESSING SHARED DATA | EMC Corporation |
| PCTUS2001004564 | | SYSTEM AND METHOD FOR REPRESENTING AND MAINTAINING REDUNDANT DATA SETS UTILIZING DNA TRANSMISSION ADN TRANSCRIPTION TECHNIQUES | EMC Corporation |
| PCTUS2001004762 | | SYSTEM AND METHOD FOR INTELLIGENT, GLOBALLY DISTRIBUTED NETWORK STORAGE | EMC Corporation |
| PCTUS2001004768 | | SYSTEM AND METHOD FOR DISTRIBUTED MANAGEMENT OF DATA STORAGE | EMC Corporation |
| PCTUS2001012298 | | CONTROLLER FAIL-OVER WITHOUT DEVICE BRING-UP | EMC Corporation |
| PCTUS2001040119 | | SYSTEM AND METHOD FOR DATA PROTECTION WITH MULTIDIMENSIONAL PARITY | EMC Corporation |
| PCTUS2001050495 | | RESTORING MASS STORAGE DEVICE TO A PRIOR STATE IN RESPONSE TO PROCESSING INTERRUPTION | EMC Corporation |
| PCTUS200131306 | | SYSTEM FOR IDENTIFYING COMMON DIGITAL SEQUENCES | EMC Corporation |
| PCTUS200145082 | | REMOTE MIRRORING IN A SWITCHED ENVIRONMENT | EMC Corporation |
| PCTUS200145437 | | ADAPTIVE PRE-FETCHING OF DATA FROM A DISK | EMC Corporation |
| PCTUS200148991 | | DUAL CHANNEL RESTORATION OF DATA BETWEEN PRIMARY AND BACKUP SERVERS | EMC Corporation |
| PCTUS20020022848 | | NETWORK SECURITY DEVICES AND METHODS | EMC Corporation |
| PCTUS20020048477 | | METHOD OF AUTHENTICATING A PAYMENT ACCOUNT USER | EMC Corporation |
| PCTUS20020247228 | | SYSTEM AND METHODS FOR PROVIDING METADATA FOR TRACKING OF INFORMATION ON A DISTRIBUTED FILE SYSTEM OF STORAGE DEVICES | EMC Corporation |
| PCTUS20020371120 | | DYNAMIC FILE ACCESS CONTROL AND MANAGEMENT | EMC Corporation |
| PCTUS200214163 | | SELECTION OF A RESOURCE IN A DISTRIBUTED COMPUTER SYSTEM | EMC Corporation |
| PCTUS200216871 | | INFORMATION REPLICATION SYSTEM HAVING ENHANCED ERROR DETECTION AND RECOVERY | EMC Corporation |
| PCTUS200220079 | | MIRRORING NETWORK DATA TO ESTABLISH VIRTUAL STORAGE AREA NETWORK | EMC Corporation |
| PCTUS200230557 | | PACKET CLASSIFICATION IN A STORAGE SYSTEM | EMC Corporation |
| PCTUS200230912 | | PROTOCOL TRANSLATION IN A STORAGE SYSTEM | EMC Corporation |
| PCTUS2003025099 | | CRYPTOGRAPHIC METHODS AND APPARATUS FOR SECURE AUTHENTICATION | EMC Corporation |
| PCTUS200302785 | | Disk-Based Archival Data Storage System and Method | EMC Corporation |

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|---|---|---|---|
| PCTUS2003036699 | | SYSTEMS AND METHODS FOR RESTRIPING FILES IN A DISTRIBUTED FILE SYSTEM | EMC Corporation |
| PCTUS200323998 | | METHOD AND APPARATUS FOR PROVISIONING STORAGE RESOURCES | EMC Corporation |
| PCTUS20040025383 | | Method for embedding a server into a storage subsystem | EMC Corporation |
| PCTUS2004003498 | | VIRTUAL ORDERED WRITES | EMC Corporation |
| PCTUS2004005731 | | DATA STORAGE SYSTEM | EMC Corporation |
| PCTUS2004008825 | | SOFT ADDRESSING FOR DISK DRIVE ENCLOSURES | EMC Corporation |
| PCTUS2004009836 | | METHOD AND APPARATUS FOR MULTI-REALM SYSTEM MODELING | EMC Corporation |
| PCTUS2004009946 | | METHOD AND APPARATUS FOR SYSTEM MANAGEMENT USING CODEBOOK CORRELATION WITH SYMPTOM EXCLUSION | EMC Corporation |
| PCTUS2004014379 | | METHOD AND APPARATUS FOR AUTHENTICATION OF USERS AND WEB SITES | EMC Corporation |
| PCTUS2004021846 | | SECURE SEED GENERATION PROTOCOL | EMC Corporation |
| PCTUS2004025754 | | DATA STORAGE SYSTEM HAVING SHARED RESOURCE | EMC Corporation |
| PCTUS2004029688 | | SYSTEM AND METHOD FOR AUTHENTICATION | EMC Corporation |
| PCTUS2004029776 | | SYSTEM AND METHOD PROVIDING DISCONNECTED AUTHENTICATION | EMC Corporation |
| PCTUS2004034330 | | VIRTUAL ORDERED WRITES FOR MULTIPLE STORAGE DEVICES | EMC Corporation |
| PCTUS2004036963 | | METHOD FOR MAPPING A FLAT NAMESPACE ONTO A HIERARCHICAL NAMESPACE USING LOCALITY OF REFERENCE CUES | EMC Corporation |
| PCTUS2004036993 | | SYSTEM AND METHOD OF ADDRESSING EMAIL AND ELECTRONIC COMMUNICATION FRAUD | EMC Corporation |
| PCTUS2004037887 | | DATA STORAGE SYSTEM | EMC Corporation |
| PCTUS2004041240 | | TECHNIQUES FOR MAINTAINING OPERATION OF A DATA STORAGE SYSTEM DURING A FAILURE | EMC Corporation |
| PCTUS2004041284 | | VIRTUAL VOICEPRINT SYSTEM AND METHOD FOR GENERATING VOICEPRINTS | EMC Corporation |
| PCTUS2004041298 | | SYSTEM AND METHOD FOR PROVIDING IMPROVED CLAIMANT AUTHENTICATION | EMC Corporation |
| PCTUS200416480 | | SYSTEM AND METHOD FOR TRANSFERING DATA FROM A SOURCE MACHINE TO A TARGET MACHINE | EMC Corporation |
| PCTUS200429174 | | DATA MESSAGE MIRRORING AND REDIRECTION | EMC Corporation |
| PCTUS200429690 | | SYSTEM AND METHOD FOR RISK BASED AUTHENTICATION | EMC Corporation |
| PCTUS20050024203 | | Systems and methods for providing distributed cache coherence | EMC Corporation |

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|---|---|---|---|
| PCTUS20050050 9 | | SYSTEMS AND METHODS FOR PARALLEL COMMUNICATION | EMC Corporation |
| PCTUS20050143 02 | | STORAGE SWITCH TRAFFIC BANDWIDTH CONTROL | EMC Corporation |
| PCTUS20050143 08 | | ONLINE INITIAL MIRROR SYNCHRONIZATION AND MIRROR SYNCHRONIZATION VERIFICATION IN STORAGE AREA NETWORKS | EMC Corporation |
| PCTUS20050227 95 | | LOW COST FLEXIBLE NETWORK ACCESSED STORAGE ARCHITECTURE | EMC Corporation |
| PCTUS20050259 38 | | TRACKING OBJECTS MODIFIED BETWEEN BACKUP OPERATIONS | EMC Corporation |
| PCTUS20050262 07 | | STORING DATA REPLICAS REMOTELY | EMC Corporation |
| PCTUS20050352 01 | | VIRTUAL ORDERED WRITES | EMC Corporation |
| PCTUS20050369 45 | | CONFIGURING, MONITORING AND/OR MANAGING RESOURCE GROUPS USING WEB SERVICES | EMC Corporation |
| PCTUS20050370 87 | | CONFIGURING, MONITORING AND/OR MANAGING RESOURCE GROUPS INCLUDING A VIRTUAL MACHINE | EMC Corporation |
| PCTUS20050370 88 | | CONFIGURING, MONITORING AND/OR MANAGING RESOURCE GROUPS | EMC Corporation |
| PCTUS20050403 76 | | IMPLEMENTING APPLICATION SPECIFIC MANAGEMENT POLICIES ON A CONTENT ADDRESSED STORAGE DEVICE | EMC Corporation |
| PCTUS20050403 77 | | CONTENT ADDRESSED STORAGE DEVICE CONFIGURED TO MAINTAIN CONTENT ADDRESS MAPPING | EMC Corporation |
| PCTUS20050461 11 | | BACKUP INFORMATION MANAGEMENT | EMC Corporation |
| PCTUS20050464 33 | | METHOD TO PERFORM PARALLEL DATA MIGRATION IN A CLUSTERED STORAGE ENVIRONMENT | EMC Corporation |
| PCTUS20050464 72 | | MULTI-FUNCTION EXPANSION SLOTS FOR A STORAGE SYSTEM | EMC Corporation |
| PCTUS20050464 90 | | SYSTEMS AND METHODS FOR DYNAMIC DATA BACKUP | EMC Corporation |
| PCTUS20050468 40 | | SYSTEMS AND METHODS FOR RESTORING DATA | EMC Corporation |
| PCTUS20060010 64 | | METHODS AND APPARATUS FOR MANAGING DELETION OF DATA | EMC Corporation |
| PCTUS20060010 65 | | METHODS AND APPARATUS FOR MANAGING DELETION OF DATA | EMC Corporation |
| PCTUS20060010 73 | | ASYNCHRONOUS EVENT NOTIFICATION | EMC Corporation |
| PCTUS20060056 06 | | DERIVATIVE SEEDS | EMC Corporation |
| PCTUS20060064 74 | | CHECKPOINT AND CONSISTENCY MARKERS | EMC Corporation |
| PCTUS20060084 24 | | SECTOR-EDGE CACHE | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| PCTUS2006008426 | | ASYNCHRONOUS DETECTION OF LOCAL EVENT BASED POINT-IN-TIME STATE OF LOCAL-COPY IN THE REMOTE-COPY IN A DELTA-SET ASYNCHRONOUS REMOTE REPLICATION | EMC Corporation |
| PCTUS2006011129 | | TECHNIQUES FOR PROVIDING COMMUNICATION IN A DATA STORAGE SYSTEM USING A SINGLE IC FOR BOTH STORAGE DEVICE COMMUNICATIONS AND PEER-TO-PEER COMMUNICATIONS | EMC Corporation |
| PCTUS2006011784 | | DATA STORAGE SYSTEM HAVING MEMORY CONTROLLER WITH EMBEDDED CPU | EMC Corporation |
| PCTUS2006014180 | | METHODS AND APPARATUS FOR STORING CONTENT IN A FILE SYSTEM | EMC Corporation |
| PCTUS2006014181 | | METHODS AND APPARATUS FOR MANAGING THE STORAGE OF CONTENT (TIME BASED DIRECTORY STRUCTURES IN CENTERA) | EMC Corporation |
| PCTUS2006020927 | | MULTIPLEXING SYSTEM | EMC Corporation |
| PCTUS2006024535 | | STORAGE DATA ENCRYPTION | EMC Corporation |
| PCTUS2006025287 | | CREATION OF A SINGLE CLIENT SNAPSHOT USING A CLIENT UTILITY | EMC Corporation |
| PCTUS2006025435 | | REDIRECTING AND MIRRORING OF TELEPHONIC COMMUNICATIONS | EMC Corporation |
| PCTUS2006030865 | | SEARCHABLE BACKUPS | EMC Corporation |
| PCTUS2006031202 | | DATA OBJECT SEARCH AND RETRIEVAL | EMC Corporation |
| PCTUS2006031487 | | SNAPSHOT INDEXING | EMC Corporation |
| PCTUS2006032221 | | INFORMATION PROTECTION METHOD AND SYSTEM | EMC Corporation |
| PCTUS2006032379 | | COMPLIANCE PROCESSING OF RIGHTS MANAGED DATA | EMC Corporation |
| PCTUS2006039638 | | FRAUDULENT TRANSACTIONS BY COLORING | EMC Corporation |
| PCTUS2006049539 | | CONTINUOUS BACKUP USING A MIRROR DEVICE | EMC Corporation |
| PCTUS2006049593 | | METHODS AND APPARATUS FOR CONFIGURING A STORAGE SYSTEM | EMC Corporation |
| PCTUS200614000 | | TRAVERSING DATA IN A REPEATABLE MANNER | EMC Corporation |
| PCTUS200625434 | | ENHANCED SERVICES PROVIDED USING COMMUNICATION REDIRECTION AND PROCESSING | EMC Corporation |
| PCTUS200636762 | | AUTHENTICATION METHOD AND APPARATUS UTILIZING PROOF-OF-AUTHENTICATION MODULE | EMC Corporation |
| PCTUS2007007533 | | METHODS AND APPARATUS FOR TRANSFERRING CONTENT FROM A STORAGE SYSTEM | EMC Corporation |
| PCTUS2007007536 | | ACCESSING DATA STORAGE DEVICES | EMC Corporation |
| PCTUS2007007943 | | SMART CONTAINERS | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| PCTUS2007008989 | | EFFICIENT DATA STORAGE USING RESEMBLANCE OF DATA SEGMENTS | EMC Corporation |
| PCTUS2007014148 | | DATABASE OFFLOAD PROCESSING | EMC Corporation |
| PCTUS2007062156 | | SYSTEMS AND METHODS FOR OBTAINING ULTRA-HIGH DATA AVAILABILITY AND GEOGRAPHIC DISASTER TOLERANCE | EMC Corporation |
| PCTUS2007064440 | | HIGH EFFICIENCY PORTABLE ARCHIVE | EMC Corporation |
| PCTUS2007068661 | | AUTOMATED PRIORITY RESTORES | EMC Corporation |
| PCTUS2007081018 | | CRYPTOGRAPHIC KEY MANAGEMENT SYSTEM FACILITATING SECURE ACCESS OF DATA PORTIONS TO CORRESPONDING GROUPS OF USERS | EMC Corporation |
| PCTUS2008004560 | | SEEDING REPLICATION | EMC Corporation |
| PCTUS2008011959 | | POLICY BASED FILE MANAGEMENT | EMC Corporation |
| PCTUS200803568 | | AUTOMATED INFORMATION LIFE-CYCLE MANAGEMENT WITH THIN PROVISIONING | EMC Corporation |
| PCTUS200804104 | | CLUSTER STORAGE USING SUBSEGMENTING | EMC Corporation |
| PCTUS2008070097 | | SYSTEM AND METHOD FOR PROVIDING WRITE-ONCE-READ-MANY (WORM) STORAGE | EMC Corporation |
| PCTUS2008075467 | | DE-DUPLICATION IN VIRTUALIZED SERVER AND VIRTUALIZED STORAGE ENVIRONMENTS | EMC Corporation |
| PCTUS200870955 | | SYSTEM AND METHOD FOR REMOTE ASYNCHRONOUS DATA REPLICATION | EMC Corporation |
| PCTUS2009000567 | | METHOD AND APPARATUS FOR PROCESSING DISTRIBUTED DATA | EMC Corporation |
| PCTUS2009038254 | | SYSTEM, METHOD, AND APPARATUS FOR SINGLE SIGN-ON AND MANAGING ACCESS TO RESOURCES ACROSS A NETWORK | EMC Corporation |
| PCTUS2009054965 | | METHOD AND APPARATUS FOR MANAGING DATA OBJECTS OF A DATA STORAGE SYSTEM | EMC Corporation |
| PCTUS200941786 | | MULTIPEER | EMC Corporation |
| PCTUS2010001639 | | SEGMENT DEDUPLICATION SYSTEM WITH ENCRYPTION OF SEGMENTS | EMC Corporation |
| PCTUS2010001764 | | SYSTEM AND METHOD FOR PROVIDING LONG-TERM STORAGE FOR DATA | EMC Corporation |
| PCTUS2010002593 | | SNAPSHOTTING OF A PERFORMANCE STORAGE SYSTEM IN A SYSTEM FOR PERFORMANCE IMPROVEMENT OF A CAPACITY OPTIMIZED STORAGE SYSTEM | EMC Corporation |
| PCTUS2010043821 | | DATA PROCESSING SYSTEM USING CACHE-AWARE MULTIPATH DISTRIBUTION OF STORAGE COMMANDS AMONG CACHING STORAGE CONTROLLERS | EMC Corporation |
| PCTUS2010052349 | | SYSTEMS AND METHODS FOR FACILITATING DATA DISCOVERY | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| PCTUS201022466 | | SYSTEM AND METHOD FOR SECURE AND RELIABLE MULTI-CLOUD DATA REPLICATION | EMC Corporation |
| PCTUS2011000424 | | INDEX SEARCHING USING A BLOOM FILTER | EMC Corporation |
| PCTUS2011001604 | | TRANSMITTING FILESYSTEM CHANGES OVER A NETWORK | EMC Corporation |
| PCTUS2011022578 | | SYSTEM AND METHOD FOR NETWORK SECURITY INCLUDING DETECTION OF MAN-IN-THE-BROWSER ATTACKS | EMC Corporation |
| PCTUS2011026720 | | SYSTEM AND METHOD FOR NETWORK SECURITY INCLUDING DETECTION OF ATTACKS THROUGH PARTNER WEBSITES | EMC Corporation |
| PCTUS2011053682 | | OPTIMIZED RECOVERY | EMC Corporation |
| PCTUS201142219 | | DATA ACCESS DURING DATA RECOVERY | EMC Corporation |
| PCTUS201144115 | | SYSTEM AND METHOD FOR SUB-BAND DATA DEDUPLICATION FOR DISK STORAGE SUBSYSTEMS | EMC Corporation |
| PCTUS201167145 | | EFFICIENT STORAGE TIERING | EMC Corporation |
| PCTUS2012028035 | | SYSTEM AND METHOD FOR MAINTAINING CONSISTENT POINTS IN FILE SYSTEMS USING A PRIME DEPENDENCY LIST | EMC Corporation |
| PCTUS2012028037 | | TIME-BASED DATA PARTITIONING | EMC Corporation |
| PCTUS2012028041 | | RESOURCE EFFICIENT SCALE-OUT FILE SYSTEMS | EMC Corporation |
| PCTUS2012070188 | | EFFICIENT BACKUP REPLICATION | EMC Corporation |
| PCTUS2013061478 | | SYSTEM AND METHOD FOR FULL VIRTUAL MACHINE BACKUP USING STORAGE SYSTEM FUNCTIONALITY | EMC Corporation |
| PCTUS201333280 | | STORAGE SYSTEM WITH INCREMENTAL MULTI-DIMENSIONAL RAID | EMC Corporation |
| PCTUS201348840 | | LOSSLESS COMPRESSION OF FRAGMENTED IMAGE DATA | EMC Corporation |
| PCTUS201361768 | | IDENTITY AND ACCESS MANAGEMENT | EMC Corporation |
| PCTUS2014016596 | | DATA ANALYTICS PLATFORM OVER PARALLEL DATABASES AND DISTRIBUTED FILE SYSTEMS | EMC Corporation |
| PCTUS201471647 | | PARALLEL ON-PREMISES AND CLOUD-BASED AUTHENTICATION | EMC Corporation |
| PCTUS201566497 | | METHOD AND SYSTEM TO SEARCH LOGS THAT CONTAIN A MASSIVE NUMBER OF ENTRIES | EMC Corporation |
| PCTUS2016177770 | | DISASTER RECOVERY AS A SERVICE | EMC Corporation |
| PCTUS2016177772 | | SECURE CLOUD-BASED STORAGE OF DATA SHARED ACROSS FILE SYSTEM OBJECTS AND CLIENTS | EMC Corporation |
| PCTUS8904845 | | SYSTEM & METHOD FOR SHARING RESOURCES OF A HOST COMPUTER AMONG A PLURALITY OF | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| | | REMOTE COMPUTERS | |
| PCTUS9002315 | | FAILURE-TOLERANT MASS STORAGE SYSTEM | EMC Corporation |
| PCTUS9003594 | | Method and Circuit for Programmably Selecting a Variable Sequence of Elements Using Write-Back (As amended) | EMC Corporation |
| PCTUS9003629 | | Method and Circuit for Decoding a Manchester Code Signal | EMC Corporation |
| PCTUS9006079 | | METHOD AND APPARATUS FOR SECURE IDENTIFICATION AND VERIFICATION | EMC Corporation |
| PCTUS9101253 | | METHOD AND APPARATUS FOR ASSIGNING SIGNATURES TO IDENTIFY MEMBERS OF A SET OF MASS OF STORAGE DEVICES | EMC Corporation |
| PCTUS9101254 | | NON-VOLATILE MEMORY STORAGE OF WRITE OPERATION IDENTIFIER IN DATA STORAGE DEVICE | EMC Corporation |
| PCTUS9101255 | | Enhanced Interface Permitting Multiple-Byte Parallel Transfers of Control Information and Data on a Small Computer System Interface (SCSI) Communication Bus and a Mass Storage System Incorporating the Enhanced Interface | EMC Corporation |
| PCTUS9101256 | | Multi-Port Mass Storage Device Announcing its Active Paths without Deactivating its Ports in a Network Architecture | EMC Corporation |
| PCTUS9101257 | | Data Corrections Applicable to Redundant Array of Independent Disks | EMC Corporation |
| PCTUS9101276 | | DISK ARRAY SYSTEM | EMC Corporation |
| PCTUS9101716 | | Method for Storing Data from an External Processor in Storage Devices Through Buffer Devices (As Amended) | EMC Corporation |
| PCTUS9102314 | | APPARATUS AND METHOD FOR CONTROLLING DATA FLOW BETWEEN A COMPUTER AND MEMORY DEVICES | EMC Corporation |
| PCTUS9102316 | | Method and Apparatus For Controlling Reselection of a Bus by Overriding a Prioritization Protocol | EMC Corporation |
| PCTUS9102317 | | Resource Management in a Multiple Resource System | EMC Corporation |
| PCTUS9200059 | | Storage Device Array Architecture with Copyback Cache | EMC Corporation |
| PCTUS9305255 | | SYSTEM AND METHOD FOR DYNAMICALLY CONTROLLING CACHE MANAGEMENT | EMC Corporation |
| PCTUS9311345 | | INRUSH CURRENT LIMITER | EMC Corporation |
| PCTUS9503181 | | METHOD AND APPARATUS FOR UTILIZING A TOKEN FOR RESOURCE ACCESS PROCEDE ET APPAREIL D'UTILISATION D'UN JETON D'ACCES A DE | EMC Corporation |
| PCTUS9513324 | | SNAPSHOT OF DATA STORED ON A MASS STORAGE SYSTEM | EMC Corporation |
| PCTUS96013742 | | HIGH AVAILABILITY COMPUTER SYSTEM AND METHODS RELATED THERETO | EMC Corporation |
| PCTUS9609463 | | RESERVED CYLINDER FOR SCSI DEVICE WRITE BACK CACHE | EMC Corporation |
| PCTUS9609843 | | REAL-TIME DATA PROTECTION SYSTEM AND METHOD | EMC Corporation |
| PCTUS9613172 | | DATA STORAGE SYSTEM | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| PCTUS9613781 | | SYSTEM FOR MIGRATING DATA BY SELECTING A FIRST OR SECOND TRANSFER MEANS BASED ON THE STATUS OF A DATA ELEMENT MAP | EMC Corporation |
| PCTUS9617156 | | STAGGERED STREAM SUPPORT FOR VIDEO ON DEMAND | EMC Corporation |
| PCTUS9703000 | | SYSTEM FOR ORTHOGONAL SIGNAL MULTIPLEXING | EMC Corporation |
| PCTUS9709419 | | METHOD AND APPARATUS FOR INDEPENDENT AND SIMULTANEOUS ACCESS TO A COMMON DATA SET | EMC Corporation |
| PCTUS9715747 | | DATA VALIDATION SYSTEM FOR A GROUP OF DATA STORAGE DISKS | EMC Corporation |
| PCTUS9716195 | | FILE TRANSFER UTILITY WHICH EMPLOYS AN INTERMEDIATE DATA STORAGE SYSTEM | EMC Corporation |
| PCTUS9717432 | | DYNAMICALLY UPGRADEABLE DISK ARRAY SYSTEM AND METHOD | EMC Corporation |
| PCTUS9718522 | | FAIL-OVER SWITCHING SYSTEM | EMC Corporation |
| PCTUS9718523 | | HIGH PERFORMANCE DATA PATH WITH XOR ON THE FLY | EMC Corporation |
| PCTUS9720406 | | SYSTEM AND METHOD FOR MAINTAINING A LOGICALLY CONSISTENT BACKUP USING MINIMAL DATA TRANSFER | EMC Corporation |
| PCTUS98019725 | | DYNAMIC MIRROR SERVICE POLICY | EMC Corporation |
| PCTUS9802816 | | I/O CONTROLLER SOFTWARE USING GROUPS OF THREADS | EMC Corporation |
| PCTUS9805779 | | AN AGENT-IMPLEMENTED LOCKING MECHANISM | EMC Corporation |
| PCTUS9809887 | | APPARATUS AND METHOD FOR BACKUP OF A DISK STORAGE SYSTEM | EMC Corporation |
| PCTUS9820532 | | RELIABLE ARRAY OF DISTRIBUTED COMPUTING NODES | EMC Corporation |
| PCTUS9824530 | | METHOD FOR IMPROVING PERFORMANCE OF LARGE DATABASES | EMC Corporation |
| PCTUS9904373 | | METHOD & APPARATUS FOR STORING DIVERSE DATA STRUCTURES | EMC Corporation |
| PCTUS9906719 | | METHOD AND APPARATUS FOR ASYNCHRONOUSLY UPDATING A MIRROR OF A SOURCE DEVICE | EMC Corporation |
| PCTUS9913358 | | ENHANCED BLOCK CIPHERS WITH DATA-DEPENDENT ROTATIONS | EMC Corporation |
| PCTUS9913358 | | ENHANCED BLOCK CIPHERS WITH DATA-DEPENDENT ROTATIONS | EMC Corporation |
| PCTUS9913628 | | METHOD AND APPARATUS FOR PROVIDING DATA MANAGEMENT FOR A STORAGE SYSTEM COUPLED TO A NETWORK | EMC Corporation |
| PCTUS9918601 | | METHOD FOR EXCHANGING VOLUMES IN A DISK ARRAY STORAGE DEVICE | EMC Corporation |
| PCTUS9923939 | | METHOD AND APPARATUS FOR CASCADING DATA THROUGH REDUNDANT DATA STORAGE UNITS | EMC Corporation |
| PCTUS9926450 | | LOGICAL UNIT MAPPING IN A STORAGE AREA NETWORK (SAN) ENVIRONMENT | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| PCTUS9927569 | | METHOD AND APPARATUS FOR IDENTIFYING CHANGES TO A LOGICAL OBJECT BASED ON CHANGES TO THE LOGICAL OBJECT AT A PHYSICAL LEVEL | EMC Corporation |
| PCTUS9931105 | | METHOD AND APPARATUS FOR BALANCING WORKLOADS AMONG PATHS IN A MULTI-PATH COMPUTER SYSTEM BASED ON THE STATE OF PREVIOUS I/O OPERATIONS (As Amended) | EMC Corporation |
| PCTUS9931178 | | DATA STORAGE SYSTEM | EMC Corporation |
| PCTUS9931208 | | ONLINE DEBUGGING AND TRACING SYSTEM AND METHOD | EMC Corporation |
| PCTUS9931213 | | DATA STORAGE SYSTEM | EMC Corporation |
| PI9106875-4 | PI9106875 | FAULT TOLERANT COMPUTER SYSTEM | EMC Corporation |
| PI9307360-7 | PI9307360-7 | METHOD AND APPARATUS FOR AUTHENTICATION OF CLIENT SERVER COMMUNICATION | EMC Corporation |
| RU2013156784 | | PATH SELECTION TO READ OR WRITE DATA | EMC Corporation |
| RU2015109763 | | OBJECT ENCRYPTION | EMC Corporation |
| RU2015111013 | | METADATA REPRESENTATION AND STORAGE | EMC Corporation |
| RU2015139056 | | WEIGHTLESS DATA OBJECTS CONTENT VERIFICATION | EMC Corporation |
| RU2015139057 | | TRACING GARBAGE COLLECTOR FOR SEARCH TREES UNDER MULTIVERSION CONCURRENCY CONTROL | EMC Corporation |
| RU2015140625 | | BLOCK LEVEL DEDUPLICATION WITH BLOCK SIMILARITY | EMC Corporation |
| RU2015141116 | | DISK SYNCHRONIZATION | EMC Corporation |
| RU2015153847 | | COPYING GARBAGE COLLECTOR FOR B+ TREES UNDER MULTI-VERSION CONCURRENCY CONTROL | EMC Corporation |
| RU2015153848 | | MUTABLE DATA OBJECTS CONTENT VERIFICATION TOOL | EMC Corporation |
| RU2015153849 | | GARBAGE COLLECTION SCOPE DETECTION FOR DISTRIBUTED STORAGE | EMC Corporation |
| RU2015154486 | | CAPACITY EXHAUSTION PREVENTION FOR DISTRIBUTED STORAGE | EMC Corporation |
| RU2015154746 | | STATISTICS MANAGEMENT FOR SCALE-OUT STORAGE | EMC Corporation |
| RU2015155279 | | MULTI-STREAM OBJECT-BASED UPLOAD IN A DISTRIBUTED FILE SYSTEM | EMC Corporation |
| RU2015155281 | | OPTIMIZATION OF NETWORK DATA TRANSFERS OVER A WIDE AREA NETWORK | EMC Corporation |
| RU2015155284 | | CONNECTION-ORIENTED COMMUNICATION DEVICES WITH ROUND TRIP TIME ESTIMATION | EMC Corporation |
| RU2015155753 | | ERASURE CODING FOR ELASTIC CLOUD STORAGE | EMC Corporation |
| RU2015155763 | | ACCELERATED GALOIS FIELD CODING FOR STORAGE SYSTEMS | EMC Corporation |
| RU2016108810 | | OPTIMIZED AUTO-TIERING | EMC Corporation |
| RU2016111896 | | ACCELERATED ERASURE CODING FOR STORAGE SYSTEMS | EMC Corporation |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| RU2016111898 | | SYSTEM AND METHOD FOR SYNCHRONIZATION IN A CLUSTER ENVIRONMENT | EMC Corporation |
| RU2016112119 | | WRITE CACHE SYSTEM AND METHOD | EMC Corporation |
| RU2016112133 | | MANAGING SSD WRITE QUOTAS IN DATA STORAGE SYSTEMS | EMC Corporation |
| RU2016112139 | | MANAGING SSD WEAR RATE IN HYBRID STORAGE ARRAYS | EMC Corporation |
| RU2016112181 | | SYSTEM AND METHOD FOR REFERENCE TRACKING GARBAGE COLLECTOR | EMC Corporation |
| RU2016112182 | | SYSTEM AND METHOD FOR QUASI-COMPACTING GARBAGE COLLECTION | EMC Corporation |
| RU2016124790 | | CLOUD STORAGE WRITE CACHE MANAGEMENT SYSTEM AND METHOD | EMC Corporation |
| RU2016124793 | | CONFIGURATION MANAGEMENT FOR CLOUD STORAGE SYSTEM AND METHOD | EMC Corporation |
| RU2016125443 | | EFFICIENT ERASURE CODING OF LARGE DATA OBJECTS | EMC Corporation |
| RU2016125850 | | INCREMENTAL ERASURE CODING FOR STORAGE SYSTEMS | EMC Corporation |
| RU2016125853 | | INCREMENTAL BLOOM FILTER REBUILD FOR B+ TREES UNDER MULTI-VERSION CONCURRENCY CONTROL | EMC Corporation |
| RU2016125855 | | DATA OBJECT RECOVERY FOR STORAGE SYSTEMS | EMC Corporation |
| SE(EP)91910198.1 | SE(EP)0555219 | METHOD AND APPARATUS FOR PERSONAL IDENTIFICATION | EMC Corporation |
| SG2012055000 | 182716 | SYSTEM AND METHOD FOR NETWORK SECURITY INCLUDING DETECTION OF MAN-IN-THE-BROWSER ATTACKS | EMC Corporation |
| SG201206053-9 | 183332 | SYSTEM AND METHOD FOR NETWORK SECURITY INCLUDING DETECTION OF ATTACKS THROUGH PARTNER WEBSITES | EMC Corporation |
| TW85108635 | TW125576 | INTEGRITY PROTECTION FOR PARITY CALCULATION FOR RAID PARITY CACHE | EMC Corporation |
| WO1999US14934 | | Readable Indelible Mark on Storage Media | EMC Corporation |
| WO2007US78395 | | SYSTEMS AND METHODS OF IMPROVING PERFORMANCE OF TRANSPORT PROTOCOLS IN A MULTI-PATH ENVIRONMENT | EMC Corporation |
| 11609560 | 7774565 | METHODS AND APPARATUS FOR POINT IN TIME DATA ACCESS AND RECOVERY | EIDC |
| 10512687 | 8205009 | APPARATUS FOR CONTINUOUS COMPRESSION OF LARGE VOLUMES OF DATA | EIDC |
| 11536160 | 7627687 | METHODS AND APPARATUS FOR MANAGING DATA FLOW IN A CONTINUOUS DATA REPLICATION SYSTEM HAVING JOURNALING | EIDC |
| 11536233 | 7627612 | METHODS AND APPARATUS FOR OPTIMAL JOURNALING FOR CONTINUOUS DATA REPLICATION | EIDC |
| 13404129 | N/A | HYPERVISOR VIRTUAL SERVER SYSTEM HAS VIRTUAL DATA SERVICES APPLIANCE RECEIVING INTERCEPTED INPUT/OUTPUT REQUESTS FROM | EIDC |

| Application Number | Registration Number | Title | Owner |
|---|---|---|---|
| | | TAPPING DRIVER | |
| 15246816 | N/A | SECURITY FOR NETWORK COMPUTING ENVIRONMENT USING CENTRALIZED SECURITY SYSTEM | EMC Corporation |
| 15248404 | N/A | STATUS MONITORING SYSTEM AND METHOD | EMC Corporation |
| 15248462 | N/A | DATA TIERING BASED ON DATA SERVICE STATUS | EMC Corporation |
| 15248434 | N/A | CLUSTER-BASED ADAPTIVE METHODS AND APPARATUS FOR GENERATING PRICE RECOMMENDATIONS USING ONLINE TESTING | EMC Corporation |
| 62379966 | N/A | INFRASTRUCTURE BEZEL SYSTEM | EMC Corporation |
| | N/A | METHOD AND SYSTEM FOR PROCESSING DATA | EMC Corporation |
| 15249066 | N/A | MANAGING DATA STORAGE | EMC Corporation |
| 14991614 | N/A | [REDACTED] | EMC Corporation |
| 15164188 | N/A | [REDACTED] | EMC Corporation |
| 15187434 | N/A | [REDACTED] | EMC Corporation |
| 15115890 | N/A | EFFICIENT DEDUPLICATION OF LOGICAL UNITS | EMC Corporation |
| 15232652 | N/A | METHOD FOR REPLICATING DATA IN A BACKUP STORAGE SYSTEM USING A COST FUNCTION | EMC Corporation |
| 62377957 | N/A | WWH SPARK | EMC Corporation |
| 62378101 | N/A | WWH Spark | EMC Corporation |
| 62378129 | N/A | WWH Spark | EMC Corporation |
| 15246125 | N/A | METADATA RECONCILIATION | EMC Corporation |
| 15247321 | N/A | STATUS MONITORING SYSTEM AND METHOD | EMC Corporation |
| 15246816 | N/A | SECURITY FOR NETWORK COMPUTING ENVIRONMENT USING CENTRALIZED SECURITY SYSTEM | EMC Corporation |
| 15233461 | N/A | POWER-SAVING MECHANISMS FOR A DYNAMIC MIRROR SERVICE POLICY | EMC Corporation |
| 15228544 | N/A | A DISTRIBUTED CONSUMER CLOUD STORAGE SYSTEM | EMC Corporation |
| 15237945 | N/A | METHOD FOR GENERATING DYNAMIC VECTOR GRAPHICS | EMC Corporation |
| 15236684 | N/A | CALCULATING DATA RELEVANCE FOR VALUATION | EMC Corporation |
| 15241692 | N/A | DATA SERVICES FOR SOFTWARE DEFINED STORAGE SYSTEM | EMC Corporation |
| 15235385 | N/A | AUTOMATED TEST COVERAGE ANALYSIS, EXECUTION AND REPORTING | EMC Corporation |
| 15122302 | N/A | SELECTIVE COMPRESSION IN DATA STORAGE SYSTEMS | EMC Corporation |
| 15251197 | N/A | LEASE-BASED LEADER DESIGNATION FOR MULTIPLE PROCESSES | EMC Corporation |
| 15241474 | N/A | CREATING DISTRIBUTED STORAGE DURING PARTITIONS | EMC Corporation |
| 62382851 | N/A | Adaptive Learning Platform for the Design and Management of Corporate Education Training | EMC Corporation |

## SCHEDULE 2 TO PATENT ASSIGNMENT AGREEMENT

## EXCLUDED PATENTS

| TITLE | APP. NO. | APP. DATE | REG. NO. | REG. DATE | STATUS |
|---|---|---|---|---|---|
| Providing Session Services With Application Connectors | 11391980 | 28-Mar-2006 | 7653732 | 26-Jan-2010 | Granted |
| Synchronizing Resource Type And Property Structures | 11644076 | 21-Dec-2006 | 8266103 | 11-Sep-2012 | Granted |
| Synchronizing Resource Type And Property Structures | 13557115 | 24-Jul-2012 | 8473456 | 25-Jun-2013 | Granted |
| Synchronizing Resource Type And Property Structures | 13899231 | 21-May-2013 | | | Published |
| Method And System For Managing Versioned Structured Documents In A Database | 13338444 | 28-Dec-2011 | 8527480 | 03-Sep-2013 | Granted |
| Methods And Systems For Building A Search Service Application | 13533002 | 26-Jun-2012 | 9098497 | 04-Aug-2015 | Granted |
| Phrase Matching For Document Classification | 12075339 | 11-Mar-2008 | 8401842 | 19-Mar-2013 | Granted |
| Method And System For Providing A Networked Collaborative Work Environment | 08893111 | 15-Jul-1997 | 6233600 | 15-May-2001 | Granted |
| Method And Apparatus For Facilitating Communication Between Collaborators In A Networked Environment | 09116069 | 15-Jul-1998 | 6230185 | 08-May-2001 | Granted |
| Method And Apparatus For Controlling Access To A Product | 09116558 | 15-Jul-1998 | 6314408 | 06-Nov-2001 | Granted |
| Method And System For Providing A Networked Collaborative Work Environment | 09703276 | 31-Oct-2000 | 7127501 | 24-Oct-2006 | Granted |
| Computer Readable Electronic Records Automated Classification System | 13369006 | 08-Feb-2012 | 8682893 | 25-Mar-2014 | Granted |
| Computer Readable Electronic Records Automated Classification System | 12315610 | 04-Dec-2008 | 8135710 | 13-Mar-2012 | Granted |
| Computer Readable Electronic Records Automated Classification System | 14173186 | 05-Feb-2014 | 9129003 | 08-Sep-2015 | Granted |
| Computer Readable Electronic | 14819341 | 05-Aug-2015 | | | Published |

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|---|---|---|---|---|---|
| Records Automated Classification System | | | | | |
| Computer Readable Electronic Records Automated Classification System | 10378025 | 28-Feb-2003 | 7478088 | 13-Jan-2009 | Granted |
| Computer Readable Electronic Records Automated Classification System | 09592778 | 13-Jun-2000 | 6553365 | 22-Apr-2003 | Granted |
| Extensible Portlet Templates | 11325363 | 03-Jan-2006 | 7739310 | 15-Jun-2010 | Granted |
| User Interface For Controls | 11279706 | 13-Apr-2006 | 7783983 | 24-Aug-2010 | Granted |
| Configurable Views Of Context-Relevant Content | 11473544 | 22-Jun-2006 | 8909748 | 09-Dec-2014 | Granted |
| Configurable Views Of Context-Relevant Content | 14537712 | 10-Nov-2014 | | | Pending |
| Web Page Content Editing | 11638857 | 13-Dec-2006 | 9037983 | 19-May-2015 | Granted |
| Dynamic Display Of Web Page Content For Editing And Review | 11638081 | 13-Dec-2006 | 8555159 | 08-Oct-2013 | Granted |
| Incorporated Web Page Content | 11639038 | 13-Dec-2006 | 8156141 | 10-Apr-2012 | Granted |
| Access Control For Business Process Data | 11644340 | 22-Dec-2006 | 8086637 | 27-Dec-2011 | Granted |
| Access Control For Business Process Data | 13302913 | 22-Nov-2011 | | | Published |
| Hierarchical Display Of Project Information In A Collaboration Environment | 11712844 | 28-Feb-2007 | 7996774 | 09-Aug-2011 | Granted |
| Hierarchical Display Of Project Information In A Collaboration Environment | 13174379 | 30-Jun-2011 | | | Allowed |
| Electronic Submission Preparation | 11824303 | 29-Jun-2007 | 8065599 | 22-Nov-2011 | Granted |
| Method And System For Providing Information Related To A Task In A Case Management System | 13433499 | 29-Mar-2012 | | | Pending |
| Synchronous Business Process Execution Engine For Action Orchestration In A Single Execution Transaction Context | 13435997 | 30-Mar-2012 | 9250869 | 02-Feb-2016 | Granted |
| A Synchronous Business Process Execution Engine For Action Orchestration | 14975331 | 18-Dec-2015 | | | Pending |
| Method And System For Managing Task Assignments | 13424604 | 20-Mar-2012 | | | Pending |
| Case Management Software Development | 13529319 | 21-Jun-2012 | 8819620 | 26-Aug-2014 | Granted |

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|---|---|---|---|---|---|
| Method And System For Using OCR Data For Grouping And Classifying Documents | 13432251 | 28-Mar-2012 | 8724907 | 13-May-2014 | Granted |
| Scanner Web Service For Web Application And Scanner Driver Communication | 13537726 | 29-Jun-2012 | 8994967 | 31-Mar-2015 | Granted |
| Scanner Web Service For Web Application And Scanner Driver Communication | 14634091 | 27-Feb-2015 | 9241030 | 19-Jan-2016 | Granted |
| Systems And Methods For Health Information Messages Archiving | 13536425 | 28-Jun-2012 | | | Pending |
| Methods And Systems For Automated Assignment Of Protection To Physical Documents That Are Digitized | 13538047 | 29-Jun-2012 | 8931044 | 06-Jan-2015 | Granted |
| Method And System For Enabling Legacy Patients Clinical Documents For Open Sharing | 13537921 | 29-Jun-2012 | | | Allowed |
| Detecting Time Zones Using Historical Date Sampling | 13630943 | 28-Sep-2012 | 9262414 | 16-Feb-2016 | Granted |
| Detecting Time Zones Using Historical Date Sampling | 14990683 | 07-Jan-2016 | | | Pending |
| New Ui Paradigm For Enterprise Collaboration Applications On Touch Base Devices | 14042521 | 30-Sep-2013 | | | Pending |
| Method To Allow Switching Of User Interface Layout Based On Context And Configuration | 14135511 | 19-Dec-2013 | | | Pending |
| Hierarchical Case Model Access Roles And Permissions | 14145048 | 31-Dec-2013 | | | Pending |
| Composable Events For Dynamic User Interface Composition | 14136232 | 20-Dec-2013 | | | Pending |
| Dynamic Discovery And Management Of Page Fragments | 14136255 | 20-Dec-2013 | | | Pending |
| Composable Context Menus | 14136287 | 20-Dec-2013 | 9170786 | 27-Oct-2015 | Granted |
| Composable Context Menus | 14842713 | 01-Sep-2015 | | | Pending |
| Prevention Of Circular Event Publication In Publish/Subscribe Model Using Path Vector | 14172196 | 04-Feb-2014 | | | Pending |
| System And Method To Present A Summarized Task View In A Case Management System | 14320213 | 30-Jun-2014 | | | Pending |
| Mechanism To Package And | 14585981 | 30-Dec-2014 | | | Pending |

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|---|---|---|---|---|---|
| Processing Reusable Themes For Web Applications | | | | | |
| Method And System For Navigation Control | 14585842 | 30-Dec-2014 | | | Pending |
| Mechanism For Webpage Composition | 14670949 | 27-Mar-2015 | | | Pending |
| Method And System For Implementing Custom UI Actions In A Web Application Using Hidden Containers | 14586172 | 30-Dec-2014 | | | Pending |
| Method And System For Implementing Context Based Display Of Objects In Web Applications Using Link Relationships | 14586260 | 30-Dec-2014 | | | Pending |
| Binding Traits To Case Nodes | 14502281 | 30-Sep-14 | | | Pending |
| Composite Index On Hierarchical Nodes In The Hierarchical Data Model Within A Case Model | 14502322 | 30-Sep-14 | | | Pending |
| Case Leaf Nodes Pointing To Business Objects Or Document Types | 14502361 | 30-Sep-14 | | | Pending |
| Modeling Case Phase/State And Phase/State Transitions For Case Nodes | 14502025 | 30-Sep-2014 | | | Pending |
| Case Model - Data Model And Behavior Versioning | 14502066 | 30-Sep-2014 | | | Pending |
| Case System Events Triggering A Process | 14502106 | 30-Sep-2014 | | | Pending |
| Placeholder Case Nodes And Child Case Nodes In A Case Model | 14502132 | 30-Sep-2014 | | | Pending |
| Creating Templates Based On Case Model Instances | 14502159 | 30-Sep-2014 | | | Pending |
| Hierarchical Permissions Model For Case Management | 14502194 | 30-Sep-2014 | | | Pending |
| Descendent Case Role Alias | 14502222 | 30-Sep-2014 | | | Pending |
| Hierarchical Permissions Model Within A Document | 14502246 | 30-Sep-2014 | | | Pending |
| Expression-Based Hierarchical Mechanism For Html Form Data Validation | 14571117 | 15-Dec-2014 | | | Pending |
| Context Menu Fragment Management | 14671289 | 27-Mar-2015 | | | Pending |
| Image Box Filtering For Optical | 14788170 | 30-Jun-2015 | | | Pending |

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|---|---|---|---|---|---|
| Character Recognition | | | | | |
| Image Box Filtering For Optical Character Recognition | 62158775 | 08-May-2015 | | | Pending |
| Case Fragment Management | 14870459 | 30-Sep-2015 | | | Pending |
| Method And System For Ideogram Character Analysis | PCTCN2015 091163 | 30-Sep-2015 | | | Pending |
| Method And System For Document Similarity Analysis | 14968421 | 14-Dec-2015 | | | Pending |
| Model Of Documents And Method For Automatically Classifying A Document | DE(EP)6020 04017695 | 30-Mar-2004 | DE(EP)1583 023 | 12-Nov-2008 | Granted |
| Model Of Documents And Method For Automatically Classifying A Document | EP0490834.3 | 30-Mar-2004 | EP1583023 | 12-Nov-2008 | Granted |
| Model Of Documents And Method For Automatically Classifying A Document | GB(EP)0490 834.3 | 30-Mar-2004 | GB(EP)1583 023 | 12-Nov-2008 | Granted |
| Model Of Documents And Method For Automatically Classifying A Document | 10852969 | 25-May-2004 | 7370059 | 06-May-2008 | Granted |
| Model Of Documents And Method For Automatically Classifying A Document | EP0490834.3 | 30-Mar-2004 | EP1583023 | 12-Nov-2008 | Granted |
| Automatic Form Generation | 11711191 | 26-Feb-2007 | 7886219 | 08-Feb-2011 | Granted |
| Generation Of Randomly Structured Forms | 11711451 | 26-Feb-2007 | 7840890 | 23-Nov-2010 | Granted |
| Method And System For Using OCR Data For Grouping And Classifying Documents | 13432139 | 28-Mar-2012 | 8595235 | 26-Nov-2013 | Granted |
| Method And System For Creating Subgroups Of Documents Using Optical Character Recognition Data | 13855906 | 03-Apr-2013 | 9069768 | 30-Jun-2015 | Granted |
| Method And System For Identifying Anchors For Fields Using Optical Character Recognition Data | 13855933 | 03-Apr-2013 | | | Pending |
| Method And System For Classifying Documents That Have Different Scales | 13865350 | 18-Apr-2013 | 8832108 | 09-Sep-2014 | Granted |
| Method And System For Using Keywords To Merge Document Clusters | 13868314 | 23-Apr-2013 | 8843494 | 23-Sep-2014 | Granted |
| Method And System For Using Location Transformations To Identify Objects | 13869769 | 24-Apr-2013 | 8880540 | 04-Nov-2014 | Granted |

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|---|---|---|---|---|---|
| Optimized Gestures For Zoom Functionality On Touch-Based Device | 14040521 | | | | Pending |
| Determining Multiple Invitee Availability Statuses For Proposed Meetings | 14108906 | | | | Pending |
| Method And System For Dynamically Generating A Watermarked Document During A Printing Or Display Operation | 11300954 | 15-Dec-2005 | 8321947 | 27-Nov-2012 | Granted |
| Method And System For Rendering Watermarked Content | 11796835 | 30-Apr-2007 | 8312552 | 13-Nov-2012 | Granted |
| Method And System For Rendering Watermarked Content Using A Watermark Window | 11796911 | 30-Apr-2007 | 8526666 | 03-Sep-2013 | Granted |
| Method And System For Implementing Independent Message Queues By Specific Applications | 13331739 | 20-Dec-2011 | | | Pending |
| Methods And Systems For Providing A Search Service Application | 13538207 | 29-Jun-2012 | | | Pending |
| Methods And Systems For Building A Search Service Application | 13537311 | 29-Jun-2012 | | | Pending |
| Extensible Service Execution Framework With Data Mapping Architecture | 14135513 | 19-Dec-2013 | | | Allowed |
| Systems And Methods For Management Of Collaborative Business Processes | 11227254 | 16-Sep-2005 | | | Pending |
| Providing Access To Managed Content In Rich Client Application Environments | 11392313 | 28-Mar-2006 | 8086667 | 27-Dec-2011 | Granted |
| Providing Access To Managed Content In Rich Client Application Environments | 13306864 | 29-Nov-2011 | 8725797 | 13-May-2014 | Granted |
| Providing Access To Managed Content In Rich Client Application Environments | 14225357 | 25-Mar-2014 | | | Published |
| Dynamic Construction Of Java Class Hierarchy Based On Metadata | 11430428 | 08-May-2006 | 8655857 | 18-Feb-2014 | Granted |
| Linking Business Objects And Documents | 11473538 | 22-Jun-2006 | 8898264 | 25-Nov-2014 | Granted |
| Linking Business Objects And | 14519770 | 21-Oct-2014 | | | Published |

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|---|---|---|---|---|---|
| Documents | | | | | |
| Batching Content Management Operations To Facilitate Efficient Database Interactions | 12005061 | 21-Dec-2007 | 8280917 | 02-Oct-2012 | Granted |
| Batching Content Management Operations To Facilitate Efficient Database Interactions | 13603065 | 04-Sep-2012 | 8650224 | 11-Feb-2014 | Granted |
| Batching Content Management Operations To Facilitate Efficient Database Interactions | 14147461 | 03-Jan-2014 | | | Published |
| System For Delivering Notification Messages Across Different Notification Media | 13536781 | 28-Jun-2012 | | | Pending |
| System For Delivering And Confirming Receipt Of Notification Messages Across Different Notification Media | 13536787 | 28-Jun-2012 | 8923823 | 30-Dec-2014 | Granted |
| Semantic-Based Business Events | 13722866 | 20-Dec-2012 | 9027144 | 05-May-2015 | Granted |
| Method And System For Migrating Content Between Enterprise Content Management Systems | 13910342 | 05-Jun-2013 | | | Pending |
| Method And System For Morphing Object Types In Enterprise Content Management Systems | 13926573 | 25-Jun-2013 | | | Pending |
| Method And System For Cloning Enterprise Content Management Systems | 13926601 | 25-Jun-2013 | | | Pending |
| Optimizing Synchronization Of Enterprise Content Management Systems | 14106506 | 13-Dec-2013 | | | Pending |
| Optimizing Synchronization Of Content Management Servers | 14132176 | 18-Dec-2013 | | | Pending |
| Action Flow Fragment Management | 14841146 | 31-Aug-2015 | | | Pending |
| Method And Mechanism For Context Driven Alteration Of UI Artifacts Instances Behavior Using Expression Based Pluggable UI Aspects | | | | | Unfiled |
| Methods And Systems For Creating Business-Oriented Report Entities | 13071266 | 24-Mar-2011 | 9135587 | 15-Sep-2015 | Granted |
| Methods And Systems For | 13245338 | 26-Sep-2011 | | | Pending |

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|---|---|---|---|---|---|
| Providing Automated Predictive Analysis | | | | | |
| Business Process Optimization Using Predictive Analytics | 14040313 | 27-Sep-2013 | | | Pending |
| Expression Based Inter-Widget Communication Mechanism | 13538434 | 29-Jun-2012 | | | Pending |
| Action Flow Client Framework | 13474501 | 17-May-2012 | 9189761 | 17-Nov-2015 | Granted |
| Method And System For Business Event Based Reporting | 13538708 | 29-Jun-2012 | | | Pending |
| Data Services Generation | 13631426 | 28-Sep-2012 | | | Pending |
| Methods And Systems For Multi-Dimensional Aggregation Using Composition | 13538928 | 29-Jun-2012 | | | Pending |
| Reorder And Selection Persistence Of Displayed Objects | 13628402 | 27-Sep-2012 | | | Pending |
| Methods And Systems For Multi-Dimensional Aggregation Using Composition | 13538889 | 29-Jun-2012 | | | Pending |
| Method And System For Stashing Of Document Alteration Information For Quicker Web Preview | 13628511 | 27-Sep-2012 | | | Pending |
| Method And System For Accelerated Transformation Of Content Based On Predictive Chunking | 13630007 | 28-Sep-2012 | 9372840 | 21-Jun-2016 | Granted |
| Method And System For Dynamic Selection Of Application Dialog Layout Design | 13683024 | 21-Nov-2012 | | | Pending |
| Mechanism To Support Composite Data Models In Html Form | 13724422 | 21-Dec-2012 | 9424243 | 23-Aug-2016 | Granted |
| Mechanism For Partial Page Refresh Using URL Addressable Hierarchical Page Structure | 13722833 | 20-Dec-2012 | | | Pending |
| Minimizing Eye Strain And Increasing Targeting Speed In Manual Indexing Operations | 13720630 | 19-Dec-2012 | | | Pending |
| Securing Visual Information On Images For Document Capture | 13720654 | 19-Dec-2012 | 9032545 | 12-May-2015 | Granted |
| Securing Visual Information On Images For Document Capture | 14685280 | 13-Apr-2015 | | | Published |
| Multi-Page Document Recognition In Document | 13720671 | 19-Dec-2012 | | | Pending |

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|---|---|---|---|---|---|
| Capture | | | | | |
| Multi-Page Document Recognition In Document Capture | 15221433 | 27-Jul-2016 | | | Pending |
| Method And System For Auto-Correcting Perspective Distortion In Document Images | 14024433 | 11-Sep-2013 | 9171359 | 27-Oct-2015 | Granted |
| Method And System For Assessing Similarity Of Documents | 14871501 | 30-Sep-2015 | | | Pending |
| Churn Prediction Based On Social Factors | 15083613 | 29-Mar-2016 | | | Pending |
| A Tokenization Solution For Mixed Languages Based On Bit Value Tree | | | | | Unfiled |
| System And Method To Improve Query Performance In Enterprise Search Based On Permission Signature | | | | | Unfiled |
| A Solution To Enhance Phrase Search With Nested Thesaurus Parsing | | | | | Unfiled |
| Advanced Full Text Search With Customized Token Injection | | | | | Unfiled |
| A Restful Batch Template To Batchly Execute Content Management Services | | | | | Unfiled |
| Optimization Of Faceted Search In XML Data | | | | | Unfiled |
| Multi-Dimensional Analysis Of Objects By Manipulating Discovered Semantic Properties | 09017823 | 03-Feb-1998 | 6028605 | 22-Feb-2000 | Granted |
| Dividing Data For Multi-Thread Backup | 11322176 | 28-Dec-2005 | 7574461 | 11-Aug-2009 | Granted |
| Framework For Defining And Implementing Behaviors Across And Within Content Object Types | 11391608 | 27-Mar-2006 | 7613726 | 03-Nov-2009 | Granted |
| Automatic Resource Leak Detection | 11393550 | 29-Mar-2006 | 8312062 | 13-Nov-2012 | Granted |
| Serialization And Deserialization | 11393199 | 30-Mar-2006 | 8131860 | 06-Mar-2012 | Granted |
| Dynamic Updating Of Display And Ranking For Search Results | 11522498 | 15-Sep-2006 | 8370334 | 05-Feb-2013 | Granted |
| User Readability Improvement For Dynamic Updating Of Search Results | 11522059 | 15-Sep-2006 | 8201107 | 12-Jun-2012 | Granted |

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|---|---|---|---|---|---|
| User Readability Improvement For Dynamic Updating Of Search Results | 13467725 | 09-May-2012 | | | Allowed |
| Synchronous Content Transfer | 11823608 | 28-Jun-2007 | 8543700 | 24-Sep-2013 | Granted |
| Processing Of A Generalized Directed Object Graph For Storage In A Relational Database | 11824375 | 29-Jun-2007 | 7664779 | 16-Feb-2010 | Granted |
| Processing Of A Generalized Directed Object Graph For Storage In A Relational Database | 13095143 | 27-Apr-2011 | 8166008 | 24-Apr-2012 | Granted |
| Processing Of A Generalized Directed Object Graph For Storage In A Relational Database | 12653312 | 11-Dec-2009 | 7958089 | 07-Jun-2011 | Granted |
| Service Scripting Framework | 11890305 | 03-Aug-2007 | 8386608 | 26-Feb-2013 | Granted |
| Service Scripting Framework | 13751924 | 28-Jan-2013 | 8812683 | 19-Aug-2014 | Granted |
| System And Method Of Distributed Query Execution | 13341529 | 30-Dec-2011 | 8949221 | 03-Feb-2015 | Granted |
| Progressive Indexing For Improving Ad-Hoc Query Performance | 13341423 | 30-Dec-2011 | 8965899 | 24-Feb-2015 | Granted |
| Blueprint-Driven Environment Template Creation In A Virtual Infrastructure | 13538392 | 29-Jun-2012 | 9043786 | 26-May-2015 | Granted |
| Blueprint-Driven Environment Template Creation In A Virtual Infrastructure | 14693148 | 22-Apr-2015 | | | Published |
| Environment-Driven Application Deployment In A Virtual Infrastructure | 13538986 | 29-Jun-2012 | 9003406 | 07-Apr-2015 | Granted |
| Environment-Driven Application Deployment In A Virtual Infrastructure | 14633401 | 27-Feb-2015 | | | Published |
| Integrated Search For Shared Storage | 13837511 | 15-Mar-2013 | 9201889 | 01-Dec-2015 | Granted |
| Method And System For Identifying Root Causes Of Application Underachievement In A Virtually Provisioned Environment | 13782349 | 01-Mar-2013 | 9154398 | 06-Oct-2015 | Granted |
| Method And System For Adjustments For Application Underachievement In A Virtually Provisioned | 13782474 | 01-Mar-2013 | 9270557 | 23-Feb-2016 | Granted |

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|---|---|---|---|---|---|
| Environment | | | | | |
| Method And System For Calculating Costs Of Application Operations In A Virtually Provisioned Environment | 13785088 | 05-Mar-2013 | 9231885 | 05-Jan-2016 | Granted |
| Method And System For Estimating Required Resources To Support A Specific Number Of Users In A Virtually Provisioned Environment | 13785114 | 05-Mar-2013 | 9128756 | 08-Sep-2015 | Granted |
| System And Method For Expression Evaluation In A Distributed Networking Environment | 13795212 | 12-Mar-2013 | 9116713 | 25-Aug-2015 | Granted |
| Method And System For Load Balancing Using Server Dormant Mode | 13433543 | 29-Mar-2012 | | | Pending |
| Method And System For Dynamic Provisioning Using Server Dormant Mode For Virtual Server Dormancy | 13433574 | 29-Mar-2012 | | | Allowed |
| Methods And Systems For Concurrent Collection And Generation Of Shared Data | 13525458 | 18-Jun-2012 | | | Pending |
| Method And System For Memory Efficient, Update Optimized, Transactional Full-Text Index View Maintenance | 13631363 | 28-Sep-2012 | 9245003 | 26-Jan-2016 | Granted |
| Method And System For Memory Efficient, Update Optimized, Transactional Full-Text Index View Maintenance | CN201380050962.1 | 20-Sep-2013 | | | Published |
| Method And System For Memory Efficient, Update Optimized, | EP13774548.5 | 20-Sep-2013 | | | Published |
| Method And System For Memory Efficient, Update Optimized, Transactional Full-Text Index View Maintenance | PCTUS201360969 | 20-Sep-2013 | | | National |
| Environment Template-Driven Environment Provisioning In A Virtual Infrastructure | 13538478 | 29-Jun-2012 | 9015712 | 21-Apr-2015 | Granted |
| Environment Template-Driven Environment Provisioning In A | 14663723 | 20-Mar-2015 | | | Published |

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|---|---|---|---|---|---|
| Virtual Infrastructure | | | | | |
| Method And System For Tracking Changes To Application Model Definitions For Application Model Migration | 13785067 | 05-Mar-2013 | | | Allowed |
| Method And System For Optimized Parallel Queuing | 13798916 | 13-Mar-2013 | 9104742 | 11-Aug-2015 | Granted |
| Automatic Elevation Of System Security | 14034239 | 23-Sep-2013 | 9055057 | 09-Jun-2015 | Granted |
| Automatic Elevation Of System Security | 14704759 | 05-May-2015 | | | Published |
| Method And System For Connecting A Content Repository To A File Sharing Service | 13799075 | 13-Mar-2013 | | | Pending |
| Integrated Search For Shared Storage Using Index Throttling To Maintain Quality Of Service | 13837594 | 15-Mar-2013 | 9239874 | 19-Jan-2016 | Granted |
| Integrated Search For Shared Storage Using Index Throttling To Maintain Quality Of Service | 14964997 | 10-Dec-2015 | | | Pending |
| Method And System For Lock Free Statistics Collection | 13928576 | 27-Jun-2013 | 9128749 | 08-Sep-2015 | Granted |
| Method And System For Calculating Changes For A Large Data Set | 13926654 | 25-Jun-2013 | | | Pending |
| Calculating Expenses To Determine Whether To Provision Additional Resources In A Virtually Provisioned Environment | 14109044 | 17-Dec-2013 | | | Pending |
| Projecting Resource Allocation To Achieve Specific Application Operation Times In A Virtually Provisioned Environment | 14106465 | 13-Dec-2013 | | | Pending |
| Synchronizing Stateless Process Across Multiple Instances | 14172152 | 04-Feb-2014 | | | Pending |
| Composable Application Session Parameters | 14136342 | 20-Dec-2013 | | | Pending |
| Expression Based Declarative Data Service Execution Chaining | 14171515 | 03-Feb-2014 | | | Pending |
| Service To Invoke Companion Applications | 14319806 | 30-Jun-2014 | | | Pending |
| Capturing Unstructured | 14570225 | 15-Dec-2014 | | | Pending |

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|---|---|---|---|---|---|
| Information In Application Pages | | | | | |
| Composable Test Automation Framework | IN2217CHE 2015 | 30-Apr-2015 | | | Pending |
| Composable Test Automation Framework | 14788106 | 30-Jun-2015 | | | Pending |
| Annotated Interfaces And Properties | IN2216CHE 2015 | 30-Apr-2015 | | | Pending |
| Annotated Test Interfaces | 14755842 | 30-Jun-2015 | | | Pending |
| Event Based Validation | 14585907 | 30-Dec-2014 | | | Pending |
| Method And System For Determining Workload Availability In A Multi-Tenant Environment | 14673415 | 30-Mar-2015 | | | Pending |
| Data Retention System For A Distributed File System | 14675022 | 31-Mar-2015 | | | Pending |
| Method And Mechanism For Data Source Fetch Through Virtual Data Source | 14840991 | 31-Aug-2015 | | | Pending |
| Method And Mechanism For Composite Data Service Generation And Implementation | 14871425 | 30-Sep-2015 | | | Pending |
| Method And System For Predictive Loading Of Software Resources | 14851590 | 11-Sep-2015 | | | Pending |
| Translation Of Unstructured Text Into Semantic Models | 14871123 | 30-Sep-2015 | | | Pending |
| Application Container And Application Service System | 14970207 | 15-Dec-2015 | | | Pending |
| Method And System For Providing Software Functionalities To Users Of Multi-Tenant Applications Via Inheritance | 14871548 | 30-Sep-2015 | | | Pending |
| Method And Mechanism For Optimal Saas Based Web Application Security Configuration Through Hierarchical Application Structure | | | | | Unfiled |
| Method And Mechanism For Distributed & Progressive Application Configuration Qualification Evaluation | | | | | Unfiled |
| Method And Mechanism For Optimal Scope Evaluation In | | | | | Unfiled |

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| Scoped Based Hierarchical Configuration Using Evaluated Scope Propagation Technique. | | | | | |
| Compos Able Docking Navigation For Optimized Application Interaction | | | | | Unfiled |
| System And Method To Enhance Phrase Search With Nested Thesaurus Parsing | | | | | Unfiled |
| Seamless Upgrade & Patching By Leveraging Docker Containers And Enhanced CS Dormant Mode | | | | | Unfiled |
| Container Session | | | | | Unfiled |
| Avoiding Duplicative Storage Of Managed Content | 11364960 | 28-Feb-2006 | 8600948 | 03-Dec-2013 | Granted |
| Incorporated Web Page Content | 11731404 | 30-Mar-2007 | 7958103 | 07-Jun-2011 | Granted |
| Incorporated Web Page Content | 13015503 | 27-Jan-2011 | 8799256 | 05-Aug-2014 | Granted |
| Object Identity And Addressability | 11823527 | 28-Jun-2007 | 8433699 | 30-Apr-2013 | Granted |
| Object Identity And Addressability | 13848903 | 22-Mar-2013 | 8874539 | 28-Oct-2014 | Granted |
| Composable Action Flows | 14136316 | 20-Dec-2013 | | | Pending |
| Unified System For Connecting A Content Repository To A File Sharing Service | 14231194 | 31-Mar-2014 | | | Pending |
| Perfect Pitch - Auto-Tuning Of ECD Components, Saas Platform | | | | | Unfiled |
| Seamless Upgrade & Patching By Leveraging Docker Containers And Enhanced CS Dormant Mode | | | | | Unfiled |
| Virtual Appliance Deployment | CN201180063285.8 | | | | Published |
| Virtual Appliance Deployment | 12983242 | | 8839241 | 16-Sep-2014 | Granted |
| Virtual Appliance Deployment | 14460030 | | 9213561 | 15-Dec-2015 | Granted |
| Virtual Appliance Deployment | 14937729 | | | | Pending |
| Virtual Appliance Deployment | PCTUS201167158 | | | | National |
| Decommissioning Virtual Appliances | 12983246 | | 8799915 | 05-Aug-2014 | Granted |
| Decommissioning Virtual Appliances | 14311157 | | 9201699 | 01-Dec-2015 | Granted |
| Instantiating Virtual Appliances | 12983249 | | 8601472 | 03-Dec-2013 | Granted |

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|---|---|---|---|---|---|
| Instantiating Virtual Appliances | 14066252 | | | | Published |
| De-Duplicating Results Of Queries Of Multiple Data Repositories | 14108706 | | | | Pending |
| Information Security Architecture For Encrypting Documents For Remote Access While Maintaining Access Control | 09321839 | 28-May-1999 | 6289450 | 11-Sep-2001 | Granted |
| Method Of Encrypting Information For Remote Access While Maintaining Access Control | 10936829 | 09-Sep-2004 | RE41186 | 30-Mar-2010 | Granted |
| Method Of Encrypting Information For Remote Access While Maintaining Access Control | 11129746 | 16-May-2005 | RE44364 | 09-Jul-2013 | Granted |
| Method Of Encrypting Information For Remote Access While Maintaining Access Control | 09985096 | 01-Nov-2001 | 6449721 | 10-Sep-2002 | Granted |
| Method For Encrypting Information For Remote Access While Maintaining Access Control | 09906811 | 18-Jul-2001 | 6339825 | 15-Jan-2002 | Granted |
| Information Security Architecture For Encryping Documents For Remote Acess While Maintaining Access Control | 09736229 | 15-Dec-2000 | 6978376 | 20-Dec-2005 | Granted |
| Information Security Architecture For Remote Access Control Using Non-Bidirectional Protocols | 10919300 | 17-Aug-2004 | 7458102 | 25-Nov-2008 | Granted |
| Seamless Integration Of Application Programs With Security Key Infrastructure | 09232977 | 18-Jan-1999 | 6490679 | 03-Dec-2002 | Granted |
| Seamless Integration Of Application Programs With Security Key Infrastructure | PCTUS0001 167 | 18-Jan-2000 | | | National |
| Methods And Apparatus For Classifying Objects | 11642794 | 20-Dec-2006 | 8375020 | 12-Feb-2013 | Granted |
| Methods And Apparatus For Dynamically Classifying Objects | 11642803 | 20-Dec-2006 | 8380696 | 19-Feb-2013 | Granted |
| Accessing Rights-Managed Content From Constrained | 11480300 | 30-Jun-2006 | | | Pending |

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|---|---|---|---|---|---|
| Connectivity Devices | | | | | |
| Methods And Apparatus For Adapting The Protection Level For Protected Content | 11541360 | 29-Sep-2006 | 9118617 | 25-Aug-2015 | Granted |
| Systems And Methods For Managing Content Having A Retention Period On A Content Addressable Storage System | 11024195 | 38350 | 7627726 | 40148 | Granted |
| Retention And Disposition Of Stored Content Associated With Multiple Stored Objects | 11371147 | 07-Mar-2006 | 7970743 | 28-Jun-2011 | Granted |
| Configurable Prioritization And Aging Of Queued Tasks | 11388351 | 23-Mar-2006 | 8539493 | 17-Sep-2013 | Granted |
| Profile-Based Assignment Of Queued Tasks | 11388856 | 23-Mar-2006 | 8347295 | 01-Jan-2013 | Granted |
| Processing Raw Information For Performing Real-Time Monitoring Of Task Queues | 11388576 | 23-Mar-2006 | 8826280 | 02-Sep-2014 | Granted |
| Wizard For Web Service Search Adapter | 11605844 | 28-Nov-2006 | 8375362 | 12-Feb-2013 | Granted |
| Object Tree Walking | 11824477 | 29-Jun-2007 | 7792979 | 07-Sep-2010 | Granted |
| Object Tree Walking | 12804663 | 26-Jul-2010 | | | Published |
| Assured Federated Records Management | 14079907 | 14-Nov-2013 | | | Allowed |
| Assured Federated Records Management | 12005125 | 19-Dec-2007 | 8615497 | 24-Dec-2013 | Granted |
| Reusing System Configuration Information And Metadata For Related Operations | 12005143 | 21-Dec-2007 | 8131884 | 06-Mar-2012 | Granted |
| Reusing System Configuration Information And Metadata For Related Operations | 13356473 | 23-Jan-2012 | 8341299 | 25-Dec-2012 | Granted |
| Reusing System Configuration Information And Metadata For Related Operations | 13684003 | 21-Nov-2012 | 8612635 | 17-Dec-2013 | Granted |
| Reusing System Configuration Information And Metadata For Related Operations | 14079912 | 14-Nov-2013 | 8990440 | 24-Mar-2015 | Granted |
| Optimized Fetching For Aspect Attributes | 12005167 | 21-Dec-2007 | 8171054 | 01-May-2012 | Granted |
| Optimized Fetching For Aspect Attributes | 13430580 | 26-Mar-2012 | 8694546 | 08-Apr-2014 | Granted |
| Customization Of Types Using Added Default Aspects | 12005157 | 21-Dec-2007 | 8244778 | 14-Aug-2012 | Granted |
| System And Method Of Dynamic Data Object Upgrades | 13251175 | 30-Sep-2011 | 8612405 | 17-Dec-2013 | Granted |

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|---|---|---|---|---|---|
| System And Method Of Dynamic Data Object Upgrades | 14061386 | 23-Oct-2013 | | | Allowed |
| System And Method Of Dynamic Data Object Upgrades | 15047043 | 18-Feb-2016 | | | Pending |
| System And Method Of Rolling Upgrades Of Data Traits | 13250992 | 30-Sep-2011 | 9164751 | 20-Oct-2015 | Granted |
| Cross-Reference And Priority Claim To Related Applications | CN201280058212.4 | 28-Sep-2012 | | | Published |
| Cross-Reference And Priority Claim To Related Applications | EP12836509.5 | 28-Sep-2012 | | | Published |
| System And Method Of Rolling Upgrades Of Data Traits | 14824876 | 12-Aug-2015 | | | Pending |
| Cross-Reference And Priority Claim To Related Applications | PCTUS201258037 | 28-Sep-2012 | | | National |
| System And Method Of Hierarchical Data Containers | 13436926 | 31-Mar-2012 | 8949281 | 03-Feb-2015 | Granted |
| System And Method Of Hierarchical Data Containers | CN201380028529.8 | 14-Mar-2013 | | | Published |
| System And Method Of Hierarchical Data Containers | EP13769703.3 | 14-Mar-2013 | | | Published |
| System And Method Of Hierarchical Data Containers | 14568726 | 12-Dec-2014 | | | Published |
| System And Method Of Hierarchical Data Containers | PCTUS201331509 | 14-Mar-2013 | | | National |
| Method And System For Virtual Server Dormancy | 13430943 | 27-Mar-2012 | | | Pending |
| Polymorphic Application Of Policy | 13435987 | 30-Mar-2012 | 9268916 | 23-Feb-2016 | Granted |
| Polymorphic Application Of Policy | 14997779 | 18-Jan-2016 | | | Pending |
| Methods For Updating Reference Count And Shared Objects In A Concurrent System | 13524411 | 15-Jun-2012 | | | Pending |
| Methods For Updating Reference Count And Shared Objects In A Concurrent System | 13524487 | 15-Jun-2012 | | | Pending |
| Data Model Based Context Tree | 13626199 | 25-Sep-2012 | | | Pending |
| Method And System For Predictive Load Balancing | 13627121 | 26-Sep-2012 | 8914517 | 16-Dec-2014 | Granted |
| Method And System For Cache Data Analysis For Enterprise Content Management Systems | 14036174 | 25-Sep-2013 | | | Pending |
| Synchronous Default Aspects To Force Customizations On Existing And New Object Instances | 14040143 | 27-Sep-2013 | | | Pending |

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|---|---|---|---|---|---|
| Method And System For Using External Content Type Object Types | 14755000 | 30-Jun-2015 | | | Pending |
| Method And System For Using Dynamic Content Types | 14755858 | 30-Jun-2015 | | | Pending |
| Method And System For Using Micro Objects | 14755537 | 30-Jun-2015 | | | Pending |
| Method And System For Extracting Content From Noisy Data | 14673472 | 30-Mar-2015 | | | Pending |
| Method And System For Configuring Processes Of Software Applications Using Activity Fragments | 14871523 | 30-Sep-2015 | | | Pending |
| Method And System For Enforcing Governance Across Multiple Content Repositories Using A Content Broker | 14870986 | 30-Sep-2015 | | | Pending |
| Method And Apparatus For Generating Metadata For A Document | PCTUS0140363 | 23-Mar-2001 | | | National |
| Providing Direct Access To Managed Content | 11229318 | 15-Sep-2005 | 8082334 | 20-Dec-2011 | Granted |
| Providing Direct Access To Distributed Managed Content | 11229036 | 15-Sep-2005 | 8396938 | 12-Mar-2013 | Granted |
| Providing Local Access To Managed Content | 11229317 | 15-Sep-2005 | 8447827 | 21-May-2013 | Granted |
| Providing Local Access To Managed Content | 13869864 | 24-Apr-2013 | | | Allowed |
| Providing Local Access To Managed Content | 15003595 | 21-Jan-2016 | | | Pending |
| Virtual Repository Management | 13189230 | 22-Jul-2011 | 8782096 | 15-Jul-2014 | Granted |
| Virtual Repository Management | 14282126 | 20-May-2014 | 9223817 | 29-Dec-2015 | Granted |
| Virtual Repository Management | 14945763 | 19-Nov-2015 | | | Pending |
| Virtual Repository Management | PCTUS2006041254 | 24-Oct-2006 | | | National |
| Virtual Repository Management | 11355556 | 16-Feb-2006 | 8015222 | 06-Sep-2011 | Granted |
| Virtual Repository Management To Provide Retention Management Services | 11355555 | 16-Feb-2006 | 8819048 | 26-Aug-2014 | Granted |
| Virtual Repository Management To Provide Functionality | EP07763646.2 | 24-Jan-2007 | | | Published |
| Virtual Repository Management To Provide Functionality | PCTUS200701944 | 24-Jan-2007 | | | National |
| Providing A Visual Indication | 11370296 | 07-Mar-2006 | | | Pending |



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|---|---|---|---|---|---|
| That Stored Content Is Associated With A Collaboration Environment | | | | | |
| Containerized Security For Managed Content | 11370293 | 07-Mar-2006 | | | Pending |
| Consistent Retention And Disposition Of Managed Content And Associated Metadata | 11370292 | 07-Mar-2006 | 7818300 | 19-Oct-2010 | Granted |
| Consistent Retention And Disposition Of Managed Content And Associated Metadata | 12872892 | 31-Aug-2010 | 8712980 | 29-Apr-2014 | Granted |
| Resolving Retention Policy Conflicts | 11370473 | 07-Mar-2006 | 7594082 | 22-Sep-2009 | Granted |
| Resolving Retention Policy Conflicts | 12462790 | 07-Aug-2009 | 7962708 | 14-Jun-2011 | Granted |
| Retention And Disposition Of Components Of A Complex Stored Object | 11370423 | 07-Mar-2006 | 7814063 | 12-Oct-2010 | Granted |
| Deploying And Distributing Content Management Code | 13523648 | 14-Jun-2012 | 9038046 | 19-May-2015 | Granted |
| Deploying And Distributing Content Management Code | 11430491 | 08-May-2006 | 8225311 | 17-Jul-2012 | Granted |
| Automatic Detection And Redistribution Of Content Management Code | 11430481 | 08-May-2006 | 8225310 | 17-Jul-2012 | Granted |
| In Place Object Reconstruction | 13687876 | 28-Nov-2012 | 9223639 | 29-Dec-2015 | Granted |
| In Place Object Reconstruction | 11430353 | 08-May-2006 | 8347321 | 01-Jan-2013 | Granted |
| Managed Content Delivery Via Web Services | 11430433 | 08-May-2006 | | | Pending |
| Mandatory Access Control List For Managed Content | 11393219 | 30-Mar-2006 | 7984066 | 19-Jul-2011 | Granted |
| Mandatory Access Control List For Managed Content | 13157954 | 10-Jun-2011 | 8370388 | 05-Feb-2013 | Granted |
| Priveleged Access To Managed Content | 11393081 | 30-Mar-2006 | 8555403 | 08-Oct-2013 | Granted |
| Priveleged Access To Managed Content | 14015844 | 30-Aug-2013 | 8973157 | 03-Mar-2015 | Granted |
| Dynamic Access Control List For Managed Content | 11393624 | 30-Mar-2006 | 8719903 | 06-May-2014 | Granted |
| Application-Supervised Access To Managed Content | 11393039 | 30-Mar-2006 | | | Pending |
| Retention Of Complex Objects | 11540503 | 29-Sep-2006 | 7801862 | 21-Sep-2010 | Granted |
| Superseding Objects In A Retention System | 11541485 | 29-Sep-2006 | 9063940 | 23-Jun-2015 | Granted |
| Superseding Objects In A | 14716650 | 19-May-2015 | | | Published |

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|---|---|---|---|---|---|
| Retention System | | | | | |
| User Management For Repository Manager | 11638654 | 12-Dec-2006 | 8533789 | 10-Sep-2013 | Granted |
| Configurable User Management | 11638340 | 12-Dec-2006 | 7702787 | 20-Apr-2010 | Granted |
| System For Lightweight Objects | 11906185 | 28-Sep-2007 | 7987210 | 26-Jul-2011 | Granted |
| System For Lightweight Objects | 13161580 | 16-Jun-2011 | 8560572 | 15-Oct-2013 | Granted |
| System For Lightweight Objects | 13969101 | 16-Aug-2013 | | | Published |
| Conversion Of Lightweight Object To A Heavyweight Object | 11906174 | 28-Sep-2007 | 8656410 | 18-Feb-2014 | Granted |
| Conversion Of Lightweight Object To A Heavyweight Object | 14148052 | 06-Jan-2014 | 9009731 | 14-Apr-2015 | Granted |
| Converting Heavyweight Objects To Lightweight Objects | 11906184 | 28-Sep-2007 | 7987470 | 26-Jul-2011 | Granted |
| Single Retention Policy | 12494645 | 30-Jun-2009 | 8856081 | 07-Oct-2014 | Granted |
| Method And System For Managing Versioned Structured Documents In A Database | 13338553 | 28-Dec-2011 | 9002810 | 07-Apr-2015 | Granted |
| Method And System For Managing Versioned Structured Documents In A Database | 13338587 | 28-Dec-2011 | 8918379 | 23-Dec-2014 | Granted |
| Method And System For Managing Versioned Structured Documents In A Database | 13338499 | 28-Dec-2011 | 8732127 | 20-May-2014 | Granted |
| Active Records Management | 13436466 | 30-Mar-2012 | 8949194 | 03-Feb-2015 | Granted |
| Method And System For Managing Versioned Structured Documents In A Database | 13338533 | 28-Dec-2011 | 8898122 | 25-Nov-2014 | Granted |
| Activity Stream Based Collaboration | 13529286 | 21-Jun-2012 | | | Pending |
| Method And System For Describing How Retention Should Be Applied To Composite Objects | 13630096 | 28-Sep-2012 | 9201877 | 01-Dec-2015 | Granted |
| Stateless Services In Content Management Clients | 13630834 | 28-Sep-2012 | 9083579 | 14-Jul-2015 | Granted |
| Stateless Services In Content Management Clients | 14734318 | 09-Jun-2015 | | | Published |
| Activity Stream Based Interaction | 13529290 | 21-Jun-2012 | | | Pending |
| Method And System For Connection Pooling For Content Management Clients | 13630538 | 28-Sep-2012 | | | Pending |
| Method And System For | 13630438 | 28-Sep-2012 | 9258793 | 09-Feb-2016 | Granted |



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| Lightweight Sessions In Content Management Clients | | | | | |
| Method And System For Access Request Alerts For Protected Information | 13926194 | 25-Jun-2013 | | | Allowed |
| Chronological Based Retention For Objects Archived Through A Web-Based Storage Interface For Ilm | 14040527 | 27-Sep-2013 | | | Pending |
| Content Access Based On Mobile Device Geographical Location | 14312909 | 24-Jun-2014 | | | Pending |
| Assimilation In Multi Model Webpage Composition | 14671212 | 27-Mar-2015 | | | Pending |
| Process Fragment Management | 14671396 | 27-Mar-2015 | | | Pending |
| Rules Based Data Extraction | 14788196 | 30-Jun-2015 | | | Pending |
| Rules Based Data Extraction | 62158797 | 08-May-2015 | | | Pending |
| Method And System For Communication Using Published Events | 14851499 | 11-Sep-2015 | | | Pending |
| Server-Orchestrated Peer-To-Peer Content Sharing In CMS And Sync-N-Share Applications | 14858913 | 18-Sep-2015 | | | Pending |
| Method And System For Creating And Using Persona In A Content Management System | 14871557 | 30-Sep-2015 | | | Pending |
| Method And System For Managing And Tracking Content Dissemination In An Enterprise | 14871126 | 30-Sep-2015 | | | Pending |
| Method And System Implementing Dynamic And/Or Adaptive User Interfaces | 14871288 | 30-Sep-2015 | | | Pending |
| Dynamic External Views With Encryption To Support Global Data Compliance For Global Archives | 14871414 | 30-Sep-2015 | | | Pending |
| Method And System For Software Application Optimization Using Natural Language-Based Queries | 14970259 | 15-Dec-2015 | | | Pending |
| Dynamic Expression Based Default Values Of Child Hierarchical Nodes Based On Ancestor Level Meta-Data. | | | | | Unfiled |
| Expression Based Conditional Creation Of Child Hierarchical | | | | | Unfiled |

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| Nodes Based On Ancestor Level Meta-Data. | | | | | |
| System And Method For End To End Performance Response Time Measurement Based On Graphic Recognition | | | | | Unfiled |
| System And Method To Solve Full Text Search Performance Issue Caused By Low-Privileged Users Based On Security Hash | | | | | Unfiled |
| System And Method To Tokenize Mixed Languages Based On Z-Tree | | | | | Unfiled |
| Method And Mechanism Of Context Driven Multi Nodal Content Discovery And Delivery In An Access Controlled Content Management System | | | | | Unfiled |
| Systems And Methods For Facilitating Management Of Data | 11933111 | | | | Allowed |
| Systems And Methods For Performing Integrated Searches With Actions | 12030153 | | 8521741 | 27-Aug-2013 | Granted |
| Systems And Methods For Managing Movement | 12023941 | | | | Pending |
| Extending Content Management Policies To Local Copies Of Content | 11810528 | 06-Jun-2007 | | | Pending |
| Transfering Virtual Datacenters Between Hosting Locations While Maintaining Communication With A Gateway Server Following The Transfer | 13174213 | 30-Jun-2011 | 9282142 | 08-Mar-2016 | Granted |
| Managing Virtual Datacenters With Tool That Maintains Communications With A Virtual Data Center That Is Moved | 13248372 | 29-Sep-2011 | 9058336 | 16-Jun-2015 | Granted |
| Provisioning Interfacing Virtual Machines To Separate Virtual Datacenters | 13248404 | 29-Sep-2011 | 8769058 | 01-Jul-2014 | Granted |
| Virtual Datacenter Redundancy | 14042200 | 30-Sep-2013 | | | Pending |
| Defining Virtual Application Templates | 14042219 | 30-Sep-2013 | | | Pending |
| Provisioning Virtual | 14042260 | 30-Sep-2013 | | | Pending |

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|---|---|---|---|---|---|
| Applications From Virtual Application Templates | | | | | |
| Method And System For Indexing A Structured Document | 13161700 | 16-Jun-2011 | 8903829 | 02-Dec-2014 | Granted |
| Method And System For Processing A Query | 13161717 | 16-Jun-2011 | 8645388 | 04-Feb-2014 | Granted |
| Methods And Systems For Building An Application Execution Map | 13245390 | 26-Sep-2011 | 9203894 | 01-Dec-2015 | Granted |
| Methods And Systems For Providing Recommendation Information | 13074188 | 29-Mar-2011 | | | Allowed |
| Methods And Systems For Providing Recommendation Information In A Workflow Process | 13074193 | 29-Mar-2011 | | | Pending |
| Method And Systems For Providing A Warning By A Case Management System | 13245298 | 26-Sep-2011 | | | Pending |
| Efficient Xacml Access Control Processing | 13174719 | 30-Jun-2011 | 8875222 | 28-Oct-2014 | Granted |
| Trait Definitions | 13174746 | 30-Jun-2011 | 9092466 | 28-Jul-2015 | Granted |
| System And Method Of Hierarchical Archive Management | 13341194 | 30-Dec-2011 | | | Pending |
| Risk-Adaptive Access Control | 13852865 | 28-Mar-2013 | 9240996 | 19-Jan-2016 | Granted |
| Risk-Adaptive Access Control | 14957406 | 02-Dec-2015 | | | Published |
| Method And System For Configuring Resources To Enable Resource Monitoring | 13833499 | 15-Mar-2013 | 9118538 | 25-Aug-2015 | Granted |
| Execution Path Determination In A Distributed Environment | 13630966 | 28-Sep-2012 | | | Pending |
| Method And System For Multi-Dimensional Logging For Enterprise Applications | 13627148 | 26-Sep-2012 | 8949195 | 03-Feb-2015 | Granted |
| Method And System For On-Demand Aggregated Logging For Distributed Systems | 13921335 | 19-Jun-2013 | | | Pending |
| Method And System For Translating Mind Maps To Test Management Utility Test Cases | 13627086 | 26-Sep-2012 | 8949670 | 03-Feb-2015 | Granted |
| Generating Customized Documentation For Applications | 13725581 | 21-Dec-2012 | | | Pending |
| Generation And Use Of A | 13725609 | 21-Dec-2012 | 9275233 | 01-Mar-2016 | Granted |

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| Modified Protected File | | | | | |
| Generation And Use Of A Modified Protected File | 14937680 | 10-Nov-2015 | | | Published |
| Page-Independent Multi-Field Validation In Document Capture | 13720679 | 19-Dec-2012 | 9317484 | 19-Apr-2016 | Granted |
| Page-Independent Multi-Field Validation In Document Capture | 15055154 | 26-Feb-2016 | | | Published |
| Method And System For Deciding On Ordering Of Scripting Language Source Code For Dependency Resolution | 13710030 | 10-Dec-2012 | | | Pending |
| Using Server Side Font Preparation To Achieve Wysiwyg And Cross Platform Fidelity On Web Based Word Processor | 14256101 | 18-Apr-2014 | | | Published |
| Using Server Side Font Preparation To Achieve Wysiwyg And Cross Platform Fidelity On Web Based Word Processor | EP15159736.6 | 18-Mar-2015 | | | Published |
| Method And System For Content Access Authorization | 14641934 | 09-Mar-2015 | | | Pending |
| Method And System For Content Management Of Structured And Unstructured Data | 14754955 | 30-Jun-2015 | | | Pending |
| Network Configuration Backup And Restore Operations Using Continuous Data Protection | 11381343 | 02-May-2006 | 7971091 | 28-Jun-2011 | Granted |
| A Method And Apparatus For Implementing A Remote Mirroring Data Facility Without Employing A Dedicated Leased Line To Form The Link Between Two Remotely Disposed Storage Devices | 08935844 | 23-Sep-1997 | 7647460 | 12-Jan-2010 | Granted |
| Using Pseudosnapshots For Continuous Data Protection Systems To Surface a Copy Of Data | 11381347 | 02-May-2006 | 7603395 | 13-Oct- 2009 | Granted |
| Using a Virtual Device to Access Data as it Previously Existed in a Mass Data Storage System | 09268739 | 16-Mar-1999 | 6073222 | 6-Jun-2000 | Granted |
| Method and System For | 08322697 | 13-Oct-1994 | 5649152 | 15-Jul-1997 | Granted |

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|---|---|---|---|---|---|
| Providing a Static Snapshot of Data Stored on a Mass Storage System | | | | | |
| Backup System That Takes A Snapshot Of The Locations In A Mass Storage Device That Has Been Identified For Updating Prior To Updating | 08747151 | 08-Nov-1996 | 5835953 | 10-Jan-1998 | Granted |
| Comparing Mass Storage Devices Through Digests That Are Representative Of Stored Data In Order To Minimize Data Transfer | 09165180 | 01-Oct-1998 | 6085298 | 04-Jul-2000 | Granted |
| Methods And Apparatus For Multiple Point In Time Data Access | 11609561 | 12-Dec-2006 | 7849361 | 07-Dec-2010 | Granted |
| Cross Tagging Of Data For Consistent Recovery | 11356920 | 17-Feb-2006 | 7577867 | 18-Aug-2009 | Granted |
| Methods And Apparatus For Optimal Journaling For Continuous Data Replication | 11536215 | 28-Sep-2006 | 7516287 | 07-Apr-2009 | Granted |
| I/O Scheduling for Flash Drives | 11862417 | 27-Sep-2007 | 8375187 | 12-Feb-2013 | Granted |
| Efficient data storage system | 11974961 | 16-Oct-2007 | 7434015 | 07-Oct-2008 | Granted |
| Efficient data storage system | 11403153 | 11-Apr-2006 | 7305532 | 04-Dec-2007 | Granted |
| Efficient data storage system | 10325479 | 20-Dec-2002 | 7065619 | 20-Jun-2006 | Granted |
| Efficient data storage system | 11136263 | 24-May-2005 | 7373464 | 13-May-2008 | Granted |
| Efficient data storage system | 10325690 | 12/20/2002 | 6928526 | 09-Aug-2005 | Granted |
| Efficient data storage system | 12079766 | 28-Mar-2008 | 7769967 | 03-Aug-2010 | Granted |
| Efficient data storage system | 12819356 | 21-Jun-2010 | 8275955 | 25-Sep-2012 | Granted |
| Efficient data storage system | 13592746 | 23-Aug-2012 | 8612696 | 17-Dec-2013 | Granted |
| Efficient data storage system | 14068415 | 31-Oct-2013 | 9081728 | 14-Jul-2015 | Granted |
| Efficient data storage system | 14734920 | 09-Jun-2015 | | | Pending |
| Data Integrity Management for Data Storage Systems | 09342955 | 29-Jun-1999 | 6915475 | 05-Jul-2005 | Granted |
| Systems and methods which utilize parity sets | 09927042 | 09-Aug-2001 | 6904556 | 07-Jun-2005 | Granted |

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|---|---|---|---|---|---|
| Snapshot Of Data Stored On A Mass Storage System | | | AT237842 | 15-May-2003 | Granted |
| System And Method For Maintaining A Logically Consistent Backup Using Minimal Data Transfer | | | AT266228 (T) | 15-May-2004 | Granted |
| Snapshot of data stored on a | | | AU687274 | 19-Feb-1998 | Granted |

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| mass storage system | | | (B2) | | |
| System and method for maintaining a logically consistent backup using minimal data transfer | | | AU726915 (B2) | 23-Nov-2000 | Granted |
| Snapshot of data stored on a mass storage system | | | AU3958595 (A) | 6-May-1996 | Granted |
| System and method for maintaining a logically consistent backup using minimal data transfer | | | AU5174098 (A) | 29-May-1998 | Granted |
| Snapshot Of Data Stored On A Mass Storage System | PCT/US1995 /013324 | 10-Oct-1995 | CA2201859 (A1); CA2201859 (C) | 19-Dec-2000 | Granted |
| System And Method For Maintaining A Logically Consistent Backup Using Minimal Data Transfer | PCT/US1997 /020406 | 7-Nov-1997 | CA2268929 (A1) | 14-May-1998 | Granted |
| Snapshot Of Data Stored On A Mass Storage System | | | DE69530405 (T2) | 30-Oct-2003 | Granted |
| System And Method For Maintaining A Logically Consistent Backup Using Minimal Data Transfer | | | DE69729011 (T2) | 14-Jul-2005 | Granted |
| Snapshot Of Data Stored On A Mass Storage System | | | EP0786111 (B1) | 16-Apr-2003 | Granted |
| System And Method For Maintaining A Logically Consistent Backup Using Minimal Data Transfer | | | EP1012716 (A4) | 16-Aug-2001 | Granted |
| Snapshot Of Data Stored On A Mass Storage System | | | WO9612232 (A1) | 25-Apr-1996 | Granted |
| System And Method For Maintaining A Logically Consistent Backup Using Minimal Data Transfer | | | WO9820419 (A1) | 14-May-1998 | Granted |
| Data Integrity Management For Data Storage Systems | | | DE60032239 | 31-May-2007 | Granted |
| Data Integrity Management For Data Storage Systems | | | EP1198891 (B1) | 6-Dec-2006 | Granted |
| Data integrity management for data storage systems | | | EP1758253 (A1) | 28-Feb-2007 | Granted |
| Data Integrity Management For Data Storage Systems | | | WO0101581 (A9) | 4-Jan-2001 | Granted |
| Cache memory system for | | | DE10236179 | 20-Feb-2003 | Granted |



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| network data storage system, comprises memory segment having respective parity segment and data segments | | | (A1) | | |
| Fault-tolerant memory system having parity groups | GB0217160.1 | 24-Jul-2002 | GB2380836 (B) | 15-Jun-2005 | Granted |
| Memory System And Method For Using Same | | | JP4643539 (B2) | 2-Mar-2011 | Granted |
| Memory System And Using Method Therefor | | | JP2003131953 (A) | 9-May-2003 | Granted |