502925737 08/07/2014

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT2972336

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

CONVEYING PARTY DATA

| Name | Execution Date |
|----------------|----------------|
| GRANT WALLACE | 06/11/2014 |
| PHILIP SHILANE | 06/11/2014 |

RECEIVING PARTY DATA

| Name: | EMC CORPORATION |
|-----------------|------------------|
| Street Address: | 176 SOUTH STREET |
| City: | HOPKINTON |
| State/Country: | MASSACHUSETTS |
| Postal Code: | 01748 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 14302558 |

CORRESPONDENCE DATA

Fax Number: (408)720-8383

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: (408)720-8300

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Correspondent Name: TAM Q. TRAN

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Address Line 2: BLAKELY SOKOLOFF TAYLOR ZAFMAN LLP

Address Line 4: SUNNYVALE, CALIFORNIA 94085-4040

| ATTORNEY DOCKET NUMBER: | 6368P121 |
|-------------------------|-----------------|
| NAME OF SUBMITTER: | TAM Q. TRAN |
| SIGNATURE: | / Tam Q. Tran / |
| DATE SIGNED: | 08/07/2014 |

Total Attachments: 4

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PATENT 502925737 REEL: 033485 FRAME: 0769

PATENT/Joint Assignment EMC Docket No.: EMC-14-0125

ASSIGNMENT

WHEREAS, we, Grant Wallace and Philip Shilane, have invented an invention comprising and/or embodying certain improvements or discoveries or both as described in an application for Letters Patent of the United States entitled CONTENTION-FREE APPROXIMATE LRU FOR MULTI-THREADED ACCESS (Application), the specification of which:

| [X] | is being executed on even date herewith and is about to be filed in the United States Patent Office; |
|-----|--|
| | was filed on as U.S. Application No; |
| [] | was patented under U.S. Patent Noon |

WHEREAS, EMC Corporation (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts and having a usual place of business at 176 South Street, Hopkinton, Massachusetts 01748 desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey to ASSIGNEE all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including

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the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives;

AND, we hereby authorize our attorneys, EMC Corporation, to insert here in parentheses (14/302,558 filed June 12, 2014 ______) the application number and filing date of said Application (or foreign counterpart application) to facilitate the recording or other official processing of this Assignment.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals as set forth below:

REEL: 033485 FRAME: 0771

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| Date: 6/11/2014 | That Wellen |
|---|--|
| • | Inventor's Signature |
| Print full name of second inventor: | Grant Wallace |
| Residence: | 405 Oak Street |
| | Pennington, New Jersey 08534 |
| Citizenship: | United States |
| Mailing Address: | Same as above |
| STATE/COMMONWEALTH OF | w. Jorreya Lercer |
| above-named Grant Wallace known to me three employee identification card; of driver's lice AAA members with cord to | 2014, then personally appeared before me the rough satisfactory evidence of identification [] tense; [A] (other) be the person whose name is subscribed to the the/she executed the same as his/her free act and |
| | Sleden Lucy Rowers |
| | Notary Public Y |
| | Print Name: Jenn for Wage Powers |
| | My Commission expires 02/06/1017 |
| | |
| | JENNIFER MARR POWERS Notary Public State of New Jersey My Commission Expires February 8, 2017 |

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| Date: 6/1/2014 | Phyllie |
|--|--|
| • • | Inventor's Signature |
| Print full name of first inventor: | Philip Shilane |
| Residence: | 559 Aspen Woods Drive |
| | Yardley, Pennsylvania 19067 |
| Citizenship: | United States |
| Mailing Address: | Same as above |
| STATE/COMMONWEALTH OF | orcer |
| above-named Philip Shilane known to me the employee identification card; AAA Mula 11 hours to to | 2014, then personally appeared before me the bugh satisfactory evidence of identification [] ense; [4] (other) be the person whose name is subscribed to the the/she executed the same as his/her free act and |
| | Notary Public |
| | Print Name: 1 Eng. for Mar Powers |
| | My Commission expires 2/ 1/20/ 2017 |
| # | JENNIFER MARR POWERS Notary Public State of New Jersey My Commission Expiree February 8, 2017 |

RECORDED: 08/07/2014