PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

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

CONVEYING PARTY DATA

| Name | Execution Date |
|--------------------|----------------|
| Philippe Armangau | 03/28/2012 |
| Jean-Pierre Bono | 03/28/2012 |
| Sitaram Pawar | 03/28/2012 |
| Christopher Seibel | 03/28/2012 |
| Yubing Wang | 03/29/2012 |

RECEIVING PARTY DATA

| Name: | EMC Corporation |
|-------------------|-------------------------------|
| Street Address: | 176 South Street |
| Internal Address: | Office of the General Counsel |
| City: | Hopkinton |
| State/Country: | MASSACHUSETTS |
| Postal Code: | 01748 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 13433636 |

CORRESPONDENCE DATA

Fax Number: (500)829-3718 Phone: 508-435-1000 Email: Docketing@emc.com

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

via US Mail.

Correspondent Name: EMC CORPORATION OFFICE OF THE GENERAL CO

Address Line 1: 176 SOUTH STREET

Address Line 4: HOPKINTON, MASSACHUSETTS 01748

| ATTORNEY DOCKET NUMBER: | EMC-11-903 |
|-------------------------|------------|
| | |

REEL: 027953 FRAME: 0623

PATENT

| NAME OF SUBMITTER: | Deepika Bhayana | |
|--|-----------------|--|
| Total Attachments: 7 | | |
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PATENT REEL: 027953 FRAME: 0624

ASSIGNMENT

WHEREAS, we, Philippe Armangau, Jean-Pierre Bono, Sitaram Pawar, Christopher Seibel and Yubing Wang 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 MANAGING SNAPSHOTS IN CACHE-BASED STORAGE SYSTEMS (Application), the specification of which:

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

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;

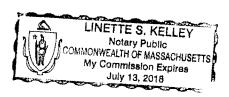
AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives,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

PATENT REEL: 027953 FRAME: 0625 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;

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

| Date: | 3/28/2012 | |
|----------|---|--|
| | | Inventor's Signature |
| Print fu | ll name of first inventor: | Philippe Armangau |
| Residen | ice: | 51 Seminole Road, Acton, MA 01720 |
| Citizens | ship: | US |
| Mailing | Address: | Same as above |
| STATE | COMMONWEALTH OF | Massachusetts Middlesex |
| On this | | |
| | g Assignment and acknowled the purposes therein containe | ged that he/she executed the same as his/her free act and |
| | | Notary Public Print Name: Linette S. Kelley |
| | | Notary Public |
| | | Print Name: Linette S. Kelley |
| | | My Commission expires <u>67</u> / <u>/3</u> / <u>20</u> /8 |
| | | |



| Date: 03/28/12 | A STATE OF THE STA |
|---|--|
| | Inventor's Signature |
| Print full name of second inventor: | Jean-Pierre Bono |
| Residence: | 33 Wachusett View Drive, Westborough, MA 01581 |
| Citizenship: | US |
| Mailing Address: | Same as above |
| STATE/COMMONWEALTH OF | assachusetts Liddlesev |
| employee identification card; [X] driver's lice | hrough satisfactory evidence of identification [] |
| | he/she executed the same as his/her free act and |
| - | Notary Public |
| | Print Name: Linette S. Kelley |
| | My Commission expires 67/13/20/8 |
| | LINETTE S. KELLEY Notary Public COMMONWEALTH OF MASSACHUSETTS ; My Commission Expires July 13, 2018 |

| Date: 3/28/2012 | Jen Ja | |
|--|--|--|
| | Inventor's Signature | |
| Print full name of third inventor: | Sitaram Pawar | |
| Residence: | 28 Edgemont Road, Shrewsbury, MA 01545 | |
| Citizenship: | IN | |
| Mailing Address: | Same as above | |
| STATE/COMMONWEALTH OF Massackuse Its COUNTY OF Middle Sex On this 28 day of March, 2012, then personally appeared before me the above-named Sitaram Pawar known to me through satisfactory evidence of identification [X] employee identification card; [_] driver's license; [_] (other) | | |
| - | Jenethe S. Kelley | |
| | Notary Public Print Name: Linette S. Kelley | |
| | My Commission expires 67/13/20/8 | |
| | CON MONWEALTH OF MASSACHUSETTS My Commission Expires July 13, 2018 | |

| Date: 3/28/2012 | Imma Las | |
|--|---|--|
| | Inventor's Signature | |
| Print full name of fourth inventor: | Christopher Seibel | |
| Residence: | 7 Jean Road, Walpole, MA 02081 | |
| Citizenship: | US | |
| Mailing Address: | Same as above | |
| ــــــــــــــــــــــــــــــــــــــ | Middle sex | |
| On this | | |
| | Senette S. Kelley | |
| | Notary Public | |
| | Print Name: Linette S. Kelley | |
| | My Commission expires <u>67</u> / <u>13</u> / <u>20</u> / <u>8</u> | |
| | LINETTE S. KELLEY Notary Public COMMONWEALTH OF MASSACHUSETTS My Commission Expires July 13, 2018 | |

| Date: $\frac{3/29/20/2}{}$ | Mehr |
|---|---|
| · | Inventor's Signature |
| Print full name of fifth inventor: | Yubing Wang |
| Residence: | 11 Blair Drive, Holden, MA 01520 |
| Citizenship: | CN |
| Mailing Address: | Same as above |
| STATE/COMMONWEALTH OF | ssachusetts Iiddlesex |
| above-named Yubing Wang known to me through employee identification card; [X] driver's lice to be the | he person whose name is subscribed to the |
| deed for the purposes therein contained. | he/she executed the same as his/her free act and |
| | Lewette S. Kelley |
| | Notary Public & |
| | Print Name: Linette S. Kelley |
| | My Commission expires <u>07</u> / <u>13</u> / <u>20</u> /8 |
| | LINETTE S. KELLEY Notary Public COMMONWEALTH OF MASSACHUSETTS My Commission Expires July 13, 2018 |