

## PATENT ASSIGNMENT

Electronic Version v1.1  
 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT																
NATURE OF CONVEYANCE:	ASSIGNMENT																
CONVEYING PARTY DATA																	
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Jean-Pierre Bono</td> <td>07/16/2013</td> </tr> <tr> <td>William C. Davenport</td> <td>07/16/2013</td> </tr> <tr> <td>Miles A. de Forest</td> <td>08/01/2013</td> </tr> <tr> <td>Walter C. Forrester</td> <td>08/15/2013</td> </tr> <tr> <td>Michal Marko</td> <td>07/11/2013</td> </tr> <tr> <td>Ye Zhang</td> <td>07/12/2013</td> </tr> <tr> <td>Phillippe Armangau</td> <td>07/17/2013</td> </tr> </tbody> </table>		Name	Execution Date	Jean-Pierre Bono	07/16/2013	William C. Davenport	07/16/2013	Miles A. de Forest	08/01/2013	Walter C. Forrester	08/15/2013	Michal Marko	07/11/2013	Ye Zhang	07/12/2013	Phillippe Armangau	07/17/2013
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<table border="1"> <tr> <td>Name:</td> <td>EMC Corporation</td> </tr> <tr> <td>Street Address:</td> <td>176 South Street</td> </tr> <tr> <td>City:</td> <td>Hopkinton</td> </tr> <tr> <td>State/Country:</td> <td>MASSACHUSETTS</td> </tr> <tr> <td>Postal Code:</td> <td>01748</td> </tr> </table>		Name:	EMC Corporation	Street Address:	176 South Street	City:	Hopkinton	State/Country:	MASSACHUSETTS	Postal Code:	01748						
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Application Number:	13931775																
CORRESPONDENCE DATA																	
Fax Number:	5083664688																
<i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>																	
Phone:	508-616-2900																
Email:	docket@bainwoodhuang.com																
Correspondent Name:	James F. Thompson																
Address Line 1:	Bainwood, Huang & Associates, Inc.																
Address Line 2:	2 Connector Road																
Address Line 4:	Westborough, MASSACHUSETTS 01581																
ATTORNEY DOCKET NUMBER:	1003-245																

CH \$40.00 13931775

NAME OF SUBMITTER:	James F. Thompson, Esq.
Signature:	/James F. Thompson/
Date:	08/27/2013
<p>Total Attachments: 21</p> <p>source=1003-245-Executed_Assmt_Bono#page1.tif source=1003-245-Executed_Assmt_Bono#page2.tif source=1003-245-Executed_Assmt_Bono#page3.tif source=1003-245-Executed_Assmt_Davenport#page1.tif source=1003-245-Executed_Assmt_Davenport#page2.tif source=1003-245-Executed_Assmt_Davenport#page3.tif source=1003-245-Executed_Assmt_de_Forest#page1.tif source=1003-245-Executed_Assmt_de_Forest#page2.tif source=1003-245-Executed_Assmt_de_Forest#page3.tif source=1003-245-Executed_Assmt_Forrester#page1.tif source=1003-245-Executed_Assmt_Forrester#page2.tif source=1003-245-Executed_Assmt_Forrester#page3.tif source=1003-245-Executed_Assmt_Marko#page1.tif source=1003-245-Executed_Assmt_Marko#page2.tif source=1003-245-Executed_Assmt_Marko#page3.tif source=1003-245-Executed_Assmt_Zhang#page1.tif source=1003-245-Executed_Assmt_Zhang#page2.tif source=1003-245-Executed_Assmt_Zhang#page3.tif source=1003-245-Executed_Assmt_Armangau#page1.tif source=1003-245-Executed_Assmt_Armangau#page2.tif source=1003-245-Executed_Assmt_Armangau#page3.tif</p>	

**ASSIGNMENT**

**WHEREAS**, I, Jean-Pierre Bono, as the original inventor or an original joint inventor 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

**FILE SYSTEM SNAPSHOTS OVER THINLY PROVISIONED VOLUME FILE IN  
MAPPED MODE**

which is further identified by Attorney Docket Number 1003-245;

**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 St., Hopkinton, MA 01748, USA desires to acquire an interest therein in accordance with agreements duly entered into with me;

**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, I 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 me had this assignment and sale not been made; I 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. I 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**, I hereby further agree for myself and my 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 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**, I 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** I hereby authorize the attorneys at Bainwood Huang & Associates LLC to insert here in parentheses (13/931,775 filed on 06/28/2013) 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**, I have hereunto set my hand and affixed my seal as set forth below:

PATENT ASSIGNMENT  
Attorney Docket No.: 1003-245  
EMC Docket No.: EMC-12-1249

Date: 07/16/13

[Signature]  
Inventor's Signature

Legal name of inventor: Jean-Pierre Bono  
Residence: 33 Wachusett View Drive  
Westborough, MA 01581  
Citizenship: US  
Mailing Address: Same as above

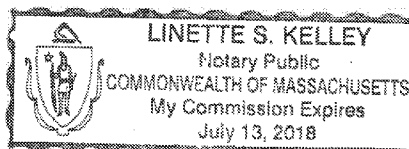
STATE/COMMONWEALTH OF Massachusetts  
COUNTY OF Middlesex

On this 16<sup>th</sup> day of July, 2013, then personally appeared before me the above-named Jean-Pierre Bono known to me through satisfactory evidence of identification [☒] employee identification card; [☐] driver's license; [☐] (other) \_\_\_\_\_ to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.

[Signature: Linette S. Kelley]  
Notary Public

Print Name: Linette S. Kelley

My Commission expires   7  /  1  /  18  



**ASSIGNMENT**

**WHEREAS**, I, William C. Davenport, as the original inventor or an original joint inventor 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

**FILE SYSTEM SNAPSHOTS OVER THINLY PROVISIONED VOLUME FILE IN  
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**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 St., Hopkinton, MA 01748, USA desires to acquire an interest therein in accordance with agreements duly entered into with me;

**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, I 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 me had this assignment and sale not been made; I 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. I 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**, I hereby further agree for myself and my 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 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**, I 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** I hereby authorize the attorneys at Bainwood Huang & Associates LLC to insert here in parentheses ( 13/931,775 filed on 06/28/2013 ) 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**, I have hereunto set my hand and affixed my seal as set forth below:

PATENT ASSIGNMENT  
Attorney Docket No.: 1003-245  
EMC Docket No.: EMC-12-1249

Date: 7/16/2013

William C. Davenport  
Inventor's Signature

Legal name of inventor: William C. Davenport  
Residence: 28 Cedar Street  
Burlington, MA 01803  
Citizenship: US  
Mailing Address: Same as above

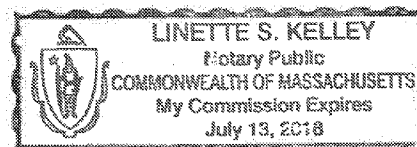
STATE/Commonwealth of Massachusetts  
COUNTY OF Middlesex

On this 16<sup>th</sup> day of July, 2013, then personally appeared before me the above-named William C. Davenport known to me through satisfactory evidence of identification [☒] employee identification card; [☐] driver's license; [☐] (other) \_\_\_\_\_ to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.

Linette S. Kelley  
Notary Public

Print Name:

Linette S. Kelley  
My Commission expires 07/13/2018



**ASSIGNMENT**

**WHEREAS**, I, Miles A. de Forest, as the original inventor or an original joint inventor 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

**FILE SYSTEM SNAPSHOTS OVER THINLY PROVISIONED VOLUME FILE IN  
MAPPED MODE**

which is further identified by Attorney Docket Number 1003-245;

**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 St., Hopkinton, MA 01748, USA desires to acquire an interest therein in accordance with agreements duly entered into with me;

**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, I 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 me had this assignment and sale not been made; I 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. I 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**, I hereby further agree for myself and my 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 the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation

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**AND**, I 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** I hereby authorize the attorneys at Bainwood Huang & Associates LLC to insert here in parentheses ( 13/931,775 filed on 06/28/2013 ) 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**, I have hereunto set my hand and affixed my seal as set forth below:

PATENT ASSIGNMENT  
Attorney Docket No.: 1003-245  
EMC Docket No.: EMC-12-1249

Date: 8/1/13

Miles A. de Forest  
Inventor's Signature

Legal name of inventor:

Miles A. de Forest

Residence:

6921 Iron Gate Drive

Bahama, NC 27503

Citizenship:

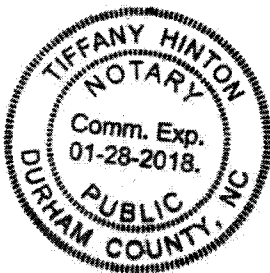
US

Mailing Address:

Same as above

STATE/Commonwealth of North Carolina  
COUNTY OF Durham

On this 1<sup>st</sup> day of August, 2013, then personally appeared before me the above-named Miles A. de Forest known to me through satisfactory evidence of identification ☐ employee identification card; ☒ driver's license; ☐ (other) \_\_\_\_\_ to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.



Tiffany Hinton  
Notary Public

Print Name:

Tiffany Hinton

My Commission expires 01/28/18

**ASSIGNMENT**

**WHEREAS**, I, Walter C. Forrester, as the original inventor or an original joint inventor 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

**FILE SYSTEM SNAPSHOTS OVER THINLY PROVISIONED VOLUME FILE IN  
MAPPED MODE**

which is further identified by Attorney Docket Number 1003-245;

**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 St., Hopkinton, MA 01748, USA desires to acquire an interest therein in accordance with agreements duly entered into with me;

**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, I 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 me had this assignment and sale not been made; I 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. I 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**, I hereby further agree for myself and my 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 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;

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**IN TESTIMONY WHEREOF**, I have hereunto set my hand and affixed my seal as set forth below:

PATENT ASSIGNMENT  
Attorney Docket No.: 1003-245  
EMC Docket No.: EMC-12-1249

Date: 8/15/2013

[Signature]  
Inventor's Signature

Legal name of inventor: Walter C. Forrester  
Residence: 21 Magnum Court  
Berkeley Heights, NJ 07922  
Citizenship: US  
Mailing Address: Same as above

STATE/Commonwealth of New Jersey  
COUNTY OF Middlesex

On this 15 day of August, 2013, then personally appeared before me the above-named Walter C. Forrester known to me through satisfactory evidence of identification ☐ employee identification card; ☒ driver's license; ☐ (other) \_\_\_\_\_ to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.

[Signature]  
Notary Public  
Print Name: **SERENA CHUANG**  
**NOTARY PUBLIC OF NEW JERSEY**  
**MY COMMISSION EXPIRES JULY 6, 2017**  
My Commission expires \_\_\_/\_\_\_/\_\_\_

**ASSIGNMENT**

**WHEREAS**, I, Michal Marko, as the original inventor or an original joint inventor 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

**FILE SYSTEM SNAPSHOTS OVER THINLY PROVISIONED VOLUME FILE IN  
MAPPED MODE**

which is further identified by Attorney Docket Number 1003-245;

**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 St., Hopkinton, MA 01748, USA desires to acquire an interest therein in accordance with agreements duly entered into with me;

**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, I 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 me had this assignment and sale not been made; I 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. I 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**, I hereby further agree for myself and my 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 the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation

PATENT ASSIGNMENT  
Attorney Docket No.: 1003-245  
EMC Docket No.: EMC-12-1249

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;

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PATENT ASSIGNMENT  
Attorney Docket No.: 1003-245  
EMC Docket No.: EMC-12-1249

Date: 7/11/13

[Signature]  
Inventor's Signature

Legal name of inventor: Michal Marko  
Residence: 30 Montrose Avenue  
Fanwood, NJ 07023  
Citizenship: US  
Mailing Address: Same as above

STATE/Commonwealth of New Jersey  
COUNTY OF UNION

On this 11 day of July, 2013, then personally appeared before me the above-named Michal Marko known to me through satisfactory evidence of identification ☐ employee identification card; ☒ driver's license; ☐ (other) \_\_\_\_\_ to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.

[Signature]  
Notary Public

Print Name: PATRICIA R. Celardo

My Commission expires 02/07/16

Patricia R Celardo  
Notary Public  
New Jersey  
My Commission Expires 2-07-16

**ASSIGNMENT**

**WHEREAS**, I, Ye Zhang, as the original inventor or an original joint inventor 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

**FILE SYSTEM SNAPSHOTS OVER THINLY PROVISIONED VOLUME FILE IN MAPPED MODE**

which is further identified by Attorney Docket Number 1003-245;

**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, USA desires to acquire an interest therein in accordance with agreements duly entered into with me;

**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, I 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 me had this assignment and sale not been made; I 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. I 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;

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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;

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PATENT ASSIGNMENT  
Attorney Docket No.: 1003-245  
EMC Docket No.: EMC-12-1249

Date: 7/12/2013

Ye Zhang

Inventor's Signature

Print full name of first inventor:

Ye Zhang

Residence:

Room 25-402, No. 7 Shiwan Road

Shanghai, China 200063

Citizenship:

CN

Mailing Address:

Same as above

I Wei Changxian (name) whose residential address is  
Room 2-601, sub Lane 10, No 67, Rende Road, Shanghai, 200434, China  
was personally present and did see \_\_\_\_\_ (name  
of person signing the assignment) who is personally known to me, execute the above  
assignment.

Wei Changxian (signature of first witness)  
Signed at Room 2-601, sub Lane 10, No 67, Rende Road, Shanghai, 200434, China  
(location of witness signature)

on this day 7/12 of 2013. (date of signature)

I Cong Honglei (name) whose residential address is  
Room 402, Building 6, Jing Xi Yi Cun, Pudong, Shanghai, 200433, China  
was personally present and did see Ye Zhang (name  
of person signing the assignment) who is personally known to me, execute the above  
assignment.

Cong Honglei (signature of second witness)  
Signed at Room 402, Building 6, Jing Xi Yi Cun, Pudong, Shanghai, 200433, China  
(location of witness signature)

on this day 7/12 of 2013. (date of signature)

**ASSIGNMENT**

**WHEREAS**, I, Philippe Armangau, as the original inventor or an original joint inventor 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

**FILE SYSTEM SNAPSHOTS OVER THINLY PROVISIONED VOLUME FILE IN MAPPED MODE**

which is further identified by Attorney Docket Number 1003-245;

**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 St., Hopkinton, MA 01748, USA desires to acquire an interest therein in accordance with agreements duly entered into with me;

**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, I 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 me had this assignment and sale not been made; I 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. I 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**, I hereby further agree for myself and my 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 the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation

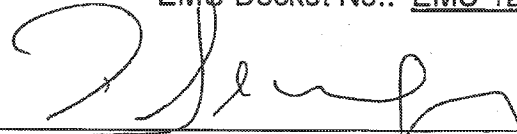
applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

**AND**, I 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** I hereby authorize the attorneys at Bainwood Huang & Associates LLC to insert here in parentheses (13/931,775 filed on 06/28/2013) 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**, I have hereunto set my hand and affixed my seal as set forth below:

Date: 7/17/13



Inventor's Signature

Legal name of inventor: Philippe Armangau  
Residence: 51 Seminole Road  
Acton, MA 01720  
Citizenship: US  
Mailing Address: Same as above

STATE/Commonwealth of Massachusetts  
COUNTY OF Middlesex

On this 17<sup>th</sup> day of July, 2013, then personally appeared before me the above-named Philippe Armangau known to me through satisfactory evidence of identification ☒ employee identification card; ☐ driver's license; ☐ (other) \_\_\_\_\_ to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.



Notary Public

Print Name:

Linette S. Kelley

My Commission expires 07/13/2018

